

## **ALTERNATIVES, INCLUDING THE PROPOSED ACTION**



*Soda Springs (Zzyzx)*

Alternatives, Including the Proposed Action

back of divider--blank page

## OVERVIEW OF ALTERNATIVES

This section addresses a range of feasible and implementable options that were developed through public scoping and review of the first draft environmental impact statement released in September 1998.

A new section entitled, Actions Common to All Alternatives, has been added in order to reduce redundancy within the alternatives and provide a discussion of agency management responsibilities for which no options were identified or that are directed by law. The range of alternatives identified includes actions that meet our stated purpose and need and could reasonably be implemented given the legislative and legal constraints under which the National Park Service operates and the specific legislative direction for the Mojave National Preserve.

**Alternative 1** along with the actions common to all alternatives presents the **proposed general management plan strategy** for the Preserve. Issues are presented under four main headings:

1. Management of Park Resources
2. Facilities and Development
3. Use of the Preserve
4. Plan Implementation

**Alternative 2** provides a description of **existing management** activities and is commonly referred to as the no-action or status quo alternative. This is the management approach that has been followed since the Preserve was established, and would continue if no further agency action were taken.

**Alternative 3** presents **optional management strategies** for some management issues where feasible and implementable alternative strategies were identified that meet our stated purpose and need for the plan. Many of the management activities in this alternative are the same as in the proposed action and are not repeated. Only those topics where options were identified are discussed.

If, through the consideration of public input, agency mission and legal requirements, some component of alternative 2 or 3 is preferred over what is currently in the proposed action, the final management plan selected in the record of decision could be a new alternative that contains components derived from any of the alternatives.

The approach to alternative development using themes was explored and rejected. Creating alternatives around themed concepts such as “Maximum Resource Protection” or “Enhanced Visitor Use,” for example, typically creates public voting on alternatives based on titles rather than content, and often creates unrealistic expectations. In this plan we felt it would be better to present alternatives without theme titles, but that instead are composed of elements that could be considered against each other across alternatives. This approach creates an array of alternative choices for issues where public input suggested it was needed, but does not create unnecessary and unrealistic choices where no issues or clear options exist.

## ACTIONS COMMON TO ALL ALTERNATIVES

This section addresses those items that remain constant between all the alternatives. Following public review of this revised draft environmental impact statement, the NPS would select a final course of action from the three alternatives. A “presentation” general management plan would then be assembled, which is comprised of these common actions, and those elements that are considered in the alternatives.

## PURPOSE AND MANAGEMENT OF MOJAVE

Unit purpose, significant features, and agency mission and mandates (laws) form the basis for management decisions and planning. Decisions about the management of resources are generally measured against these elements to determine activities that may be acceptable in a unit.

### PURPOSE AND MISSION OF MOJAVE

The park purpose is the reasons why Congress set the area aside for protection as a unit of the national park system. Mojave National Preserve was established by the California Desert Protection Act of 1994 (see appendix A). As a unit of the national park system, Mojave must be managed in accordance with the National Park Service preservation mission as provided in agencies authorizing legislation (Organic Act of 1916; 16 USC 1), which provides that the primary purpose of park units is:

*“...to conserve the scenery and the natural and historic objects and the wildlife therein, and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations.”*

In the 1970 General Authorities Act, Congress recognized that a confusing variety of designations had been used in the creation of National Park System units (parks, monuments, seashores, historic parks, recreation areas, preserves, etc.). They responded by amending the Organic Act to clarify that all units, regardless of their specific designation, are to be managed under the Organic Act mandate.

*“...these areas, though distinct in character, are united through their interrelated purposes and resources into one national park system as cumulative expressions of a single national heritage; ...and that it is the purpose of this Act to include all such areas in the System and to clarify the authorities applicable to the system.”*

In 1978, Congress amended the General Authorities Act in the Redwood National Park Act to further clarify the importance of park resources systemwide:

*“The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided for by Congress.”*

In addition to the overall purpose of parks as outlined in the NPS Organic Act, as amended, specific purposes may also be provided in each unit’s establishing or enabling legislation. Certain activities may also be authorized that would otherwise be contrary to the Organic Act (i.e. hunting, grazing, mining, etc.). These activities are not legislative purposes of the unit, but rather exceptions made by Congress to recognize pre-existing rights or activities. In the case of Mojave National Preserve, for example, hunting is an activity not normally found in national park units. Where hunting is permitted in NPS units, the area is called a preserve rather than a park.

Congress provides more specific direction for the new California desert parks and wilderness areas in section 2 (b)(1) of the California Desert Protection Act (CDPA):

*Preserve unrivaled scenic, geologic and wildlife values associated with these unique natural landscapes;*

*Perpetuate in their natural state significant and diverse ecosystems of the California Desert;*

*Protect and preserve the historical and cultural values of the California Desert associated with ancient Indian cultures, patterns of western exploration and settlement, and sites exemplifying the mining, ranching and railroading history of the Old West;*

*Provide opportunities for compatible public outdoor recreation, protect and interpret ecological and geological features and historic, paleontological, and archeological sites, maintain wilderness resource values, and promote public understanding and appreciation of the California;*

*Retain and enhance opportunities for scientific research in undisturbed ecosystems.*

The specific purposes for Mojave National Preserve, as derived from the Organic Act and the CDPA, can be summarized as follows:

- Preserve and protect the natural and scenic resources of the Mojave Desert, including transitional elements of the Sonoran and Great Basin deserts.
- Preserve and protect cultural resources representing human use associated with Native American cultures and westward expansion.
- Provide opportunities for compatible outdoor recreation and promote understanding and appreciation of the California desert.

### **SIGNIFICANCE OF MOJAVE**

Park significance statements tell why the park is special and deserves to be a part of the national park system. Statements of significance clearly define the importance of the park's resources as they relate to the park purpose. These statements help set resource protection priorities, identify primary interpretive themes, and develop desirable visitor experiences.

Significance in this context is the importance of a feature or an outstanding value. It may be locally, regionally, nationally or globally significant or important to our national and cultural heritage. It may be a feature that is unique or extraordinary. Significance is not used here in a legal sense, such as with the National Environmental Policy Act or the National Historic Preservation Act.

The following significance statements were developed for the Preserve and serve as the basis for management actions:

- Mojave National Preserve protects an extensive variety of habitats, species, and landforms unique to the Mojave Desert and is the best place to experience this ecosystem.
- Mojave National Preserve contains outstanding scenic resources, rich in visual diversity containing a varied landscape of sand dunes, mountain ranges, dry lake beds, lava flows, cinder cones, Joshua tree forests, and far-reaching vistas.

- The Joshua tree forest of Cima Dome and Shadow Valley is the largest and densest population of Joshua trees in the world.
- The Preserve is internationally known as a place to conduct desert research, and its lands are known for their geological features such as Cima Dome, the Cinder Cones, and the Kelso Dunes.
- Mojave is a naturally quiet desert environment with very dark night skies that offers visitors and researchers opportunities for natural quiet, solitude and star gazing with few human caused noise or light glare sources.
- The Mojave Desert has a long cultural history as a travel corridor across a harsh and foreboding desert, linking different areas in the Southwest. During the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, railroads were constructed in this historic transportation corridor; more recently, modern interstate highways traverse the area.
- Mojave National Preserve protects many significant rock art sites that provide evidence of early Native American use of the Mojave Desert.
- Mojave National Preserve protects numerous historic sites from early mining, ranching, homesteading and railroading endeavors that serve as reminders of the bold and tough people that opened the harsh and forbidding western frontier.
- Historic Kelso Depot is associated with the early 20<sup>th</sup> century heyday of the great steam locomotives and the establishment of the final major rail crossings of the Mojave Desert. The Kelso Depot, built in 1924, is a rare surviving example of a combined depot, railroad restaurant, and employees' rooming house.

### **INTERPRETIVE THEMES**

The primary park stories or interpretive themes are overview statements that provide the basis for communicating the purpose and significance of the park and provide the elements that the park believes each visitor should develop an understanding of during their visit. Interpretation is a process of education designed to stimulate curiosity and convey messages to the visiting public. These themes would be developed during the preparation of a comprehensive interpretive plan for the Preserve and would guide the development of interpretive materials (signs, brochures, walks, talks, etc.).

### **MANAGEMENT OBJECTIVES**

- Seek to protect significant natural and cultural resources and values, including geologic features, and to foster an improved understanding of natural processes and cultural resources through monitoring efforts and scientific research.
- Participate cooperatively in the preservation of ecological resources and cultural/ethnographic resources that extend beyond the Preserve's boundaries.
- Manage visitor use in a manner that promotes and perpetuates a sense of exploration and self-discovery, while protecting resources from overuse.
- Educate visitors regarding the National Park Service mission and the natural and cultural resources of the Preserve.

- Seek to continually improve the efficiency and effectiveness of operations and administration. Adopt and incorporate sustainable practices into all aspects of park operations.
- Perpetuate the natural quiet and sense of solitude in the Preserve. Adopt strategies and work actively to reduce human-caused noise impacts from internal and external noise sources, including aircraft overflights.
- Perpetuate scenic and cultural landscapes. Landscapes should be free from activities and facilities that distract from the scenic beauty or the historic condition of the landscape.
- Protect wilderness values and the wilderness experience in areas congressionally designated as wilderness and manage desert resources, including wilderness, for maximum statutory protection provided for under the law.
- Perpetuate and improve dark night sky conditions wherever feasible. Adopt criteria for protecting dark sky conditions and work with adjacent permitting entities to reduce glare from light sources.
- Find creative ways to increase the accessibility of NPS programs, facilities and experiences in a reasonable manner. Provide access for all segments of the population, including visitors with disabilities, small children, senior citizens, and populations that generally do not use national parks, in accordance with the laws requiring the National Park Service to preserve and protect wilderness and cultural and natural resources for the enjoyment of future generations.
- Pursue mutually supportive partnerships with representatives from gateway communities and local and tribal governments. Consider ways in which communities and the parks can support each other. Promote economic growth of communities in ways that complement the Preserve's management objectives.

### **CARRYING CAPACITY**

Park managers are often faced with decisions about how much use of a particular area is appropriate, given the need to protect resources. Decisions regarding buildings, such as museums and historic structures, are usually dictated by law and the physical capacity of the space to contain people. Visitors face these limits everywhere they go and they are widely accepted. Similar decisions regarding natural spaces are not as easily derived, nor readily accepted. Most people understand that there is a need to limit the number of people that can float the Colorado River at the same time, in order to preserve the experience. However, determining how many people can use a particular area of the park without impacting resources or other visitors experience is often more difficult.

A widely accepted definition of carrying capacity is:

*“the character of use that can be supported over a specific time by an area developed at a certain level without causing excessive damage to either the physical environment or the experience of the visitor.”*

There are three principal components that relate to determining the carrying capacity for a national park:

- The ecological or physical capabilities of the natural and cultural resources to sustain certain levels of visitor use without reaching unacceptable levels of damage. Each landscape may have varying abilities to absorb different kinds of and levels of visitor use before unacceptable levels of impacts occur.

- The sociological carrying capacity is the ability of visitors to enjoy and appreciate these resources without interference by other visitors. Determining social carrying capacity can be one of the most difficult parts of the three components. Sheer numbers relating to visitation in an area are not a valid determinant of a quality visitor experience. Other factors such as visitor behavior, preconceived expectations and social norms of the dominant user group can affect visitor enjoyment.
- The type and amount of NPS management that has been, or can be applied to the activity to mitigate unwanted impacts are also a factor. This component relates to the management of such things as roads, parking lots, buildings, trails, and visitor information. For example, providing interpretive services is an effective way to instill in the visitors an understanding and appreciation for the park resources. Such understanding helps implement carrying capacity for a particular area. Limiting parking in certain areas can effectively limit visitation.

General management plans provide NPS managers with management direction on a broad, prescriptive level. Management objectives for carrying capacity are thus written as narrative statements. These statements define the desired future visitor experience and resource conditions in qualitative terms such as “sense of seclusion,” or “low degree of tolerance for resource degradation.” These qualitative descriptors, which have been identified as “desired visitor experience and resource conditions,” would be refined and translated into quantitative standards during future implementation planning. As previously mentioned indicators and standards of quality for both the physical and social environments would be developed within future implementation plans. These products would be quantifiable and measurable aspects of the carrying capacity process. Mojave would undertake data-gathering efforts, including visitor surveys, to help define the visitor experience and resource protection goals that should define the carrying capacity of the Preserve.

### **Existing Land Uses and Desired Future Conditions**

Mojave National Preserve is a large expanse of natural Mojave Desert ecosystem. Managing the area to Preserve this system as a self-sustaining environment where native species thrive is our overall management goal. Mixed throughout this environment are existing land uses, both historic and present day, as well as special management areas (wilderness, critical habitat, state park, etc.). Some of these land uses are important for providing visitor access (roads), help tell the story of human use and occupation, or protect sensitive resources such as desert tortoise critical habitat. Some existing land uses (pipelines, major transmission lines, telephone relay sites, antennas, billboards, etc.) do not conform well with our preservation mission and management goals, but are authorized pre-existing uses. These are identified here to recognize their existence as non-conforming uses that dissect the park and at times may interfere with the visitor experience.

*Desired future conditions* for natural and cultural resources and the visitor experiences are described below. The descriptions are qualitative in nature and can be translated into quantitative standards over time during the implementation of this plan. Some descriptions could be applied to broad areas such as wilderness, while others apply to smaller areas such as road corridors and points of development. These descriptions serve as guides for managing the land and facilities to achieve desired carrying capacities.

### **Natural Environment**

The vast majority of Mojave National Preserve is a natural Mojave Desert ecosystem. This desired future condition could be thought of as the primary land use or zone that underlies all the subsequent use descriptions that follow. Except for developed areas (roads, railroads, visitor centers, campgrounds, etc.) the desired future conditions for the natural environment are the ground floor conditions that all the other land classifications build upon. **Natural Areas, Wilderness, desert tortoise critical habitat and**



**the Granite Mountains Natural Reserve are all components of the natural environment** where resource protection standards and visitor experience are altered by additional laws and management goals for these areas.

**Natural Areas.** Natural areas of the Preserve that occur outside of designated wilderness provide an informal, self-guided desert learning experience for visitors. People are encouraged to get out of their vehicles and walk to features. The pace is slow with low to moderate levels of noise. Visitors typically focus on specific resources with few visual intrusions. Visitors experience a sense of learning through onsite interpretation or other means.

The length of stay at each site is relatively short in comparison to the time visitors spend in the Preserve. There is a moderate amount of social crowding and moderate interaction at points of interest and along dead-end trails. Guided ranger walks are occasionally provided for visitors at some locations. Development is limited to items such as low interpretive panels, small directional signs, and hardened dirt paths. Fences are used as a last resort to protect resources if other management efforts do not work. The tolerance for resource degradation is low to moderate, depending on the sensitivity of the resource. The degree of onsite visitor and resource management is moderate and increases or decreases with visitation levels.

**Wilderness.** Wilderness as a desired future condition, is a subset of the natural environment, where protection of the natural values and resources is the primary management goal. Restrictions on use of these areas are imposed by law and policy in order to provide a primitive environment free from modern mechanization and motorized travel.

Visitors in this landscape experience a primitive environment largely untouched by people. Remnants of human occupation within wilderness areas that are either on or eligible for the National Register, will be identified, protected, and preserved as part of the desert landscape. However, for purposes of protection and because the desired future condition is maintaining the wilderness values (as required by the Act), little to no effort would be made to direct visitors to these historic resources. Within Mojave National Preserve's wilderness area the level of physical exertion required to hike or ride horseback into the area varies from an easy walk to a strenuous trek. A minimal number of hiking trails are present, often requiring a person to travel cross-country to get to a desired destination. Abandoned roads may also be used as routes of travel. Some restoration of pre-existing roads, mines, and dumps will likely occur as cultural studies are completed. Opportunities for independence, closeness to nature, tranquility, and the application of outdoor skills are high. Opportunities for social interaction with other visitors are low, as is the probability of encountering NPS employees. Likewise, evidence of other visitors is minimal.

The landscape offers a high degree of challenge and adventure for visitors. The visual quality of the landscape contributes significantly to the visitor experience and needs to be protected. The tolerance for resource degradation is low, with the exception of designated trail corridors, where a slightly higher level of degradation is allowed within a few feet of the trail and at points where camping occurs. A minimal amount of resource and visitor management is present. Offsite visitor management (provision of information) is low to moderate.

**Desert Tortoise Critical Habitat.** Desert tortoise critical habitat was formally designated by the U.S. Fish and Wildlife Service in 1994 and identifies those areas of the Preserve known to contain the best quality tortoise habitat when it was established. Desert tortoise critical habitat overlays both wilderness and natural areas, and is a subset of the natural environment, where protection of natural values and resources is primary. However, it is dissected by roads and utility corridors. These areas are managed for protection of the desert tortoise and their habitat.

Visitors in this landscape encounter the same general conditions and experiences as described above for the natural environment and wilderness, depending on the particular location. They may also encounter developed areas, roads, railroads, utility corridors or historic features. This subset of the natural area provides the best opportunities for observing and learning about desert tortoise habitat, life history and threats.

***Granite Mountains Natural Reserve.*** The Granite Mountains Natural Reserve is a 9,000-acre area that overlays both wilderness and non-wilderness areas. Wilderness designation over the majority of the Reserve prevents the use of mechanized equipment and motorized vehicles. It is a natural environment where continuation of arid lands research and educational activities on desert ecosystems is assured by legislation. The area is co-managed by the National Park Service and the University of California under a cooperative agreement. The area is mostly undeveloped, with only a single trail access corridor along an old mining road. The university has a few administrative support buildings on their property.

Visitors to this area encounter the same general conditions and experiences as described above for natural environment and wilderness. Additional restrictions on recreational visitor use may be applied as necessary to ensure protection of long term research areas.

### **Developed Areas**

Mixed throughout the natural environment are existing land uses, both historic and present day. Some of these land uses are important for providing visitor access (roads), help tell the story of human use and occupation or provide facilities for visitor enjoyment. Unlike non-conforming uses, these developments are considered an important part of the Preserve and are managed as such.

***Historic Preservation Areas.*** Historic preservation areas offer visitors a chance to gain a sense of the past by using as many of their senses possible without compromising the integrity of the resource. Often there are opportunities to learn by vicariously experiencing the emotions and thoughts of those who lived in the past. The experience is often a visual one, with feelings gained by physical spaces, smells, and sounds adding to the whole experience. Interpretive information adds color and meaning to the experience.

The degree of tolerance for resource degradation is low for historic resources. The chance of seeing other visitors and having social interaction is potentially high, depending on the degree of public access and visitor interest. The opportunity for contact with NPS personnel is high where ranger-led tours are offered. Visitor behavior is managed to protect the character of each place. NPS onsite management is high at sites with high visitation and impact sensitivity. Paved walks, fences, and interpretive panels are used as needed to accommodate public access and interest in accordance with the Secretary of the Interior's Standards for Rehabilitation. If interest is high, improvements may be needed to allow visitors to experience these resources while protecting them from visitor use impacts. Improvements must not distract from the significance of each location. Some features are convenient and easily accessible with little need for visitors to exert themselves, apply outdoor skills, or make a long time commitment to see the area. Some features are at remote locations and would require more effort and skill to experience. Adventure is often a part of the visitor experience at these places. The way in which people currently gain access to these locations should remain unchanged since this experience contributes to resource protection and its appreciation. Changes in access should only be made if there is strong justification to do so. Remote locations should provide a primitive setting with opportunities for solitude, exploration,

**FIGURE 2. EXISTING LAND USES AND DESIRED FUTURE CONDITIONS**

color 11x17

Alternatives, Including the Proposed Action

Back of Figure 2. Existing Land Uses and Desired Future Conditions

11x 17 color

and learning with minimal amounts of human intervention such as signs or interpretive panels.

**Visitor and Administrative Facilities.** The visitor experience in these areas is heavily influenced by structures and other fabricated features, and they are part of the visitor experience. The pace is varied, with opportunities to walk and drive. The site often is noisy with vehicles and people nearby. Visitors have opportunities to hike, learn about resources, and receive many services from facilities. Visual distractions from other visitors and their vehicles are common and expected. Buildings and other facilities are predominant, but where exceptional natural elements or cultural elements are present, they are part of the visitor experience. The constructed features are coordinated by design to reduce the visual contrast with the natural or cultural setting. Although these are developed areas, they still offer a contrast from urban life and a chance to relax and enjoy the outdoors.

Most facilities are convenient and easily accessible by the public with little need for visitors to exert themselves, apply outdoor skills, or make a long-time commitment to see the area. Opportunities for adventure are relatively unimportant. Many areas provide a strong opportunity for social interaction. Encounters with NPS staff are frequent. The tolerance for social crowding is high but there are opportunities to learn and experience a change in pace from city life. Most facilities are accessible to visitors with disabilities. Resource impacts at visitor facilities are as low as possible, occurrences only when there is no practicable alternative. Visitors and facilities are intensively managed for resource protection, visitor management, and safety (that is, there are fences, law enforcement is intensive, and visitor activities are monitored or restricted).

**Paved and Maintained Dirt Roads.** Paved and maintained dirt roads are the dominant experience for most visitors. Visitors use these narrow corridors and roadside pullouts for touring, enjoying scenic overlooks, and gaining access to natural and cultural features. While traveling, visitors may read about and understand the features they are seeing. Bicycle travel is allowed, but motorized vehicles are more common. Viewing the scenery is very important, but the views are often of distant landscapes. Vistas are protected. First-time visitors may have a sense of exploration, but little physical exertion is needed, and outdoor skills are not necessary. Visitors may spend a long time in this zone. The probability of encountering other visitors is high, although chances for social interaction are low except at roadside pullouts. The opportunity for direct contact with NPS staff is low unless emergency situations arise.

A moderate to high level of NPS management (highway signs, visitor protection) is needed to provide visitors with a safe and enjoyable experience. Because maintenance work and driving off roads can cause dirt roads to grow wider, it is necessary to specify maximum road widths and approved pullouts. Roads are limited to specified widths unless where strong justification exists. Resources can be modified for essential visitors and administrative operational needs. The tolerance for resource degradation in these corridors is moderate. Allowable impacts are restricted to a short distance from roads and pullouts.

**Unmaintained Dirt and Four-Wheel Drive Roads.** Unmaintained dirt roads provide a unique experience for drivers and other users such as mountain bike riders, equestrians, and hikers. The predominant use is by visitors in vehicles driving to enjoy the scenery, or to go to historic mining sites, or to a specific feature. Some visitors experience a strong sense of exploration, challenge, and adventure. Travel speeds are slow to moderate, with the potential of frequent stops. Many of these roads offer a sense of being in the wilderness and give visitors a sense of escape from urban life. The areas through which these roads pass are predominantly natural, but there is some evidence of people having used the area in the past and present. Increased impacts from human use are prevented to protect the

existing qualities of the landscape. Support features such as small directional signs or interpretive panels are present but infrequently seen and inconspicuous in character.

Visitors need to extend themselves, use outdoor skills, and make a large time commitment. Some roads with rough conditions require specific driving skills and more time to complete the route. Opportunities for challenge and adventure are available on some 2-wheel drive roads that require high clearance vehicles. Opportunities for social interaction are low, unless people are traveling in a group.

A moderate level of management is provided on heavily used roads to protect resources and visitors. Most people who use these roads do not want to see many other vehicles.

Resource modification is evident, but where possible, it harmonizes with the natural environment. The Preserve's tolerance for resource degradation in this zone is low except that limited signs, road surfaces and shoulders, pullouts, and camping areas are permitted. It is recognized that some 4-wheel drive roads have a number of short sections that have been widened through natural occurrences such as washouts.

***Non-Conforming Uses.*** Some existing land uses (pipelines, major transmission lines, telephone relay sites, antennas, billboards, etc.) do not conform well with the NPS preservation mission and management goals, but are authorized pre-existing uses. These are identified here to recognize their existence as non-conforming uses that dissect the park and at times may interfere with the visitor experience. Our management philosophy towards these developments is to minimize their intrusion and manage towards their eventual elimination, either through technological improvements or acquisition. Many of these uses will likely remain intact throughout the life of this plan, but as opportunities arise to minimize or eliminate them, the park would work towards that end.

## **POLICY AND PLANNING**

Park units are administered by the National Park Service, an agency under the Department of the Interior. Management of the national park system and NPS programs is guided by the Constitution, public laws, treaties, proclamations, executive orders, directives of the Secretary of the Interior and the Assistant Secretary for Fish and Wildlife and Parks, and by rules and regulations. Servicewide management policies are established by the director and provide the overall framework and guidance for park management decisions. These policies originate in law, and thus are updated regularly to reflect changes in law. The management policies were recently updated in 2000 and are now available on the NPS website at <http://www.nps.gov>. Servicewide policy is a three-tier system, beginning with the *Management Policies*. These policies are further clarified by Director's Orders, the second tier. The third tier is comprised of a series of manuals and handbooks that provide specific information to assist in the implementation of a particular program, such as Park Planning. Regulations governing activities in parks are contained in the Code of Federal Regulations, Title 36.

The NPS planning process is designed in tiers to be flexible and dynamic, beginning with overall management strategies and becoming increasingly more detailed and complementary. General management plans represent the first phase of tiered planning for parks and provide the overall management framework under which other more detailed plans are developed. This first plan is designed to remain effective for at least 15 years, but generally, much of it won't change significantly. Decisions about site-specific actions are deferred to implementation planning when more detailed site-specific analysis would be done.

The most dynamic parts of park planning are the "implementation plans" that are prepared to implement the general management plan. These plans may change as often as necessary to accommodate new

information. Examples of implementation plans that may be necessary at Mojave are listed under Future Planning Needs below.

### Strategic Planning

In 1993, Congress passed the Government Performance and Results Act (GPRA), requiring the federal government to adopt goal driven performance management concepts already widely used by the private sector. The purpose of this directive was to engage agencies in more effectively and efficiently managing their activities to achieve their missions, and to more effectively communicate with the Congress and the American people.

GPRA requires agencies to develop:

1. Strategic plans covering five years
2. Annual Performance Plans
3. Annual Performance Reports

The Preserve developed its first strategic plan in 1997, tiering off the servicewide goals and Strategic Plan for the NPS. This plan layed out a five-year strategy for park operations covering fiscal years 1998–2002. A new five-year strategic plan was prepared in April 2000 for the years 2001–2005. Each year, beginning in FY98, the park prepared an annual performance plan that identifies goals and action steps to achieve those goals. At the end of each fiscal year, a performance report is prepared documenting achievements towards our goals.

### Future Planning Needs

Additional NPS planning documents have been identified as being needed to supply detailed information for specific topics. Additional planning efforts that may be undertaken over the next ten years include:

- |  |                   |
|--|-------------------|
| • comprehensive interpretive plan                            | initiated in FY99 |
| • resource management plan                                   | initiated in FY99 |
| • fire management plan                                       | initiated in FY99 |
| • backcountry/wilderness management plan                     | initiated in FY99 |
| • development concept plan for Hole-in-the-Wall              | initiated in FY99 |
| • grazing management plan                                    | initiated in FY00 |
| • water resource management plan                             |                   |
| • development concept plan for Soda Springs                  |                   |
| • road management plan                                       |                   |
| • communication management plan                              |                   |
| • fee study plan   |                   |
| • inventorying and monitoring plan                           |                   |
| • cave management plan                                       |                   |
| • Zzyzx historic structures report/cultural landscape report |                   |
| • historic resources study                                   |                   |
| • administrative history                                     |                   |

## **EXTERNAL BOUNDARY AND ACREAGE**

### **Official Boundary Maps and Authorized Acreage**

Section 502 of the California Desert Protection Act established the Preserve and cited the acreage at approximately 1,419,800 acres. The Congressional maps delineating the boundary of the Preserve and referred to in section 502, are dated May 17, 1994, are often commonly called the “S-21 Maps.” This set of 21 blue-line map sheets provided the basis for the National Park Service to prepare the official boundary maps and legal description (see appendix C of the *Land Protection Plan*). The National Park Service prepared the official boundary maps (seven map sheets dated July 1996) according to section 504 and submitted them to Congress in August 1996, completing the legislative process of preparing official boundary maps of the Preserve. These maps are on file with the superintendent for inspection. All maps provided in this document reflect the official boundary.

The acreage of the Preserve identified in section 502 was an estimate based on calculations done manually, and did not include some lands in Lanfair Valley. However, sections 516 and 517 of the CDPA provide authority to acquire any lands within the boundary of the Preserve (under certain conditions prescribed), and further specify that acquired lands automatically become a part of the Preserve. The NPS interprets the Congressional language to mean that private lands, other than Catellus, in the Lanfair Valley area, are not part of the Preserve for purposes of regulation, but because they are included within the external boundary, they may be acquired and would become part of the Preserve automatically. Therefore, the official boundary map submitted to Congress reflects a more accurate total acreage of 1,589,165 acres of land included within the external boundary of Mojave. The *Land Protection Plan* (appendix C) provides a breakdown of the landownership. As parcels are acquired, the official boundary maps and legal description, maintained by the NPS, would be updated to reflect the change in status for these Lanfair Valley parcels.

A minor clerical correction in the boundary of the Preserve and the legal description was made in 1999 (as authorized by sec. 504 of the CDPA) to correct an inaccurate description in the official legal description of the boundary at Budweiser Wash where it intersects interstate 40. The boundary was previously attached to a non-existent road, and was thus redescribed along a nearby section line. The legal description was also corrected to reflect that private lands in Lanfair Valley, other than Catellus, are not a part of the Preserve, *until acquired* (emphasis added).

### **Modifications to Boundary**

NPS criteria for examining potential boundary modifications in a GMP are done with the purpose of adding lands with significant resources or opportunities, or that are critical to fulfilling the park mission. No such suggestions for boundary adjustments were received during scoping. To create a boundary change proposal to exclude land from the park or from wilderness would be highly controversial and would not fit the NPS criteria for boundary adjustments.

No changes in the boundary of the Preserve are proposed at this time. During the prolonged debate over the CDPA the boundaries were subjected to considerable Congressional scrutiny and debate. The National Park Service believes a comprehensive examination of potential boundary modifications at this time is unwarranted and should be delayed until the Preserve has been able to manage the area with the existing boundaries for a time to determine if there are areas where adjustments are justified.

Potential future boundary modifications that have been suggested as additions include the Viceroy mine exclusion on the eastern boundary of the Preserve, and the MolyCorp Mine exclusion between the Clark Mountain Unit and the main unit of the Preserve. These areas were previously included in the East Mojave Scenic Area, but were excluded in the legislation due to mining interests. Recently, Viceroy has



indicated that mining will end within about two years. The current boundary configuration in this area excludes a vast area that is topographically and visually within the Lanfair Valley area. In addition, the area is home to bighorn sheep and some significant cultural resources. Adjustment of the boundary to include this area would reduce the potential for incompatible uses. MolyCorp has initiated a plan of operation for continued operation and expansion of their facilities.

### **WILDERNESS MANAGEMENT**

In 1994, with passage of the California Desert Protection Act, Congress designated 695,200 acres of wilderness within the Mojave National Preserve. The Wilderness Act of 1964, defines wilderness as:

A wilderness, in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological or other features of scientific, educational, scenic, or historical value (16 USC 1131).

The National Park Service would continue to manage wilderness areas for the use and enjoyment of the American people in a way that would leave them unimpaired for future use and enjoyment as wilderness. Management would include the maximum statutory protection allowed for these areas, the preservation of their wilderness character, and the gathering and dissemination of information regarding their use and enjoyment as wilderness. Public use of wilderness may include recreation, scenic preservation, scientific study, education, conservation, historical use, and solitude. A separate backcountry/wilderness management plan would be prepared (in accordance with Director's Order 43) to address specific management issues.

The Wilderness Act generally prohibits motorized equipment or mechanized transport in designated wilderness areas; however, it allows them "as necessary to meet minimum requirements for the administration of the area for the purpose of this Act." The superintendent would continue to administer wilderness with the minimum disturbance to the area or its resources. This method of managing the wilderness area is often referred to as the "minimum tool concept." All decisions pertaining to administrative practices and use of equipment in wilderness would be based on this concept (see appendix F). Potential disruption of wilderness character and resources and applicable safety concerns would be considered before, and given significantly more weight than, economic efficiency. If some compromise of wilderness resources or character was unavoidable, only those actions that would have localized, short-term adverse impacts would be acceptable.

In 1995 the federal managers of the Mojave Desert adopted "Principles for Wilderness Management in the California Desert" (appendix F) as guidance for themselves and their staff in implementing the Wilderness Act and pertinent sections of the California Desert Protection Act. The managers represented the Bureau of Land Management (California Desert and Yuma Districts), the National Park Service (Death Valley and Joshua Tree National Parks and Mojave National Preserve) and the U.S. Fish and Wildlife Service (California State Supervisor). This interagency effort also provides some consistency in desert wilderness management.

The CDPA also modifies some provisions of the Wilderness Act. The following are the key provisions of the act related to wilderness:

- Native Americans may gain access and obtain temporary closures to wilderness for traditional cultural and religious purposes, consistent with the Wilderness Act [sec. 705 (a)].
- Federal reserved water rights are explicitly reserved for BLM and NPS wilderness [sec. 706 (a)] in a quantity sufficient to fulfill the purposes of the Act.
- Owners of nonfederal lands or interests in land are provided adequate access for reasonable use and enjoyment of their property in units of the national park system, including NPS wilderness and BLM wilderness [sec 708].

Existing developments in Wilderness would be examined in light of the restrictions in the Wilderness Act on structures and installations, subject to private rights.

### **Wilderness Maps and Legal Description**

Section 602 of the California Desert Protection Act requires that maps and legal descriptions of the wilderness areas be prepared as soon as practicable. The process of “interpreting” the wilderness boundaries provided by Congress and preparing the official maps and legal descriptions is currently underway. The wilderness boundaries shown in figure 3 reflect the preliminary final boundaries for which legal descriptions would be prepared. Once completed, final wilderness boundary maps would be submitted to Congress. It is assumed that the actual wilderness acreage may deviate from the approximate acreage of 695,200 acres estimated in section 601 of the act.

Additions or deletions to designated wilderness, or changes in corridors prescribed by Congress, would require legislation to enact. No such proposals are being made at this time.

### **Access to Private Lands and Interests in Wilderness**

The public, agency staff, ranchers and all users of wilderness would normally be required to access wilderness on foot or horseback. However, certain situations may exist where motorized access is necessary. These types of access could be considered under the general provisions of the Wilderness Act, or sections 705 and 708 (see below) of the California Desert Protection Act, that provides for adequate access and reasonable use and enjoyment to owners of nonfederal lands or interests that lie in wilderness. A minimum tool determination would be used prior to granting approval for motorized/mechanical equipment use within wilderness. Motorized access to private land, range developments, guzzlers and other interests in wilderness would be considered extraordinary and would not be routinely allowed unless unusual circumstances warrant it.

The CDPA provides two provisions relative to access to wilderness areas:

- Owners of nonfederal lands or interests in land are provided adequate access for reasonable use and enjoyment of their property in units of the national park system, including NPS wilderness and BLM wilderness [sec 708]. Access would normally be allowed only via foot or horseback, however approval motorized access is determined on a case-by-case basis using the minimal tool analysis described under the wilderness section.
- Section 705 of the CDPA recognizes past uses of the parks and wilderness areas by Indian people for traditional cultural and religious purposes, and ensures access for these uses. The Act also provides for temporary closures to the general public, upon request of an Indian tribe or Indian religious community, of one or more specific portions of the park or wilderness area in order to protect the privacy of such activities. Any closures are to be for the smallest area

**FIGURE 3. MOJAVE NATIONAL PRESERVE BOUNDARY AND WILDERNESS AREAS**

color 11x17

Alternatives, Including the Proposed Action

Back of Figure 3. Mojave National Preserve Boundary and Wilderness Areas

color 11x17

practicable and for the minimum necessary period. Access must be consistent with the purpose and intent of the American Indian Religious Freedom Act (Public Law 95-341; 42 U.S.C. 1996), and the Wilderness Act if applicable.

### **FIRE MANAGEMENT**

The current fire policy is to suppress all fires in the Preserve until fire history and effects studies are completed and a fire management plan is written and approved. These studies would provide data for determining whether to provide for natural and prescribed fires to burn in the Preserve. Minimum impact suppression techniques are utilized in all areas of the park.

The National Park Service recognizes the natural role of fire in ecosystem processes. Recent changes in federal wildland fire management policy allow for a broader range of fire management options within carefully defined parameters, as established in an approved fire management plan. Management options include full suppression, prescribed fire; natural fire managed to achieve benefits to natural resources, or a combination of these. In many cases, appropriate management strategies would be pre-determined in the planning process, based on life and property considerations, location, identification of natural or cultural resources at risk, existing vegetation and fuels, terrain, and other factors. In other instances, management strategies would be determined on a situational basis, factoring in additional variables such as current and predicted weather conditions, staffing levels, resource management objectives, terrain, and identified planning parameters.

Protection of life and property is first and foremost. All human caused fire would be suppressed, and all fire management actions would be implemented using methods, equipment and tactics that cause the least impact on natural and cultural resources. Heavy equipment, such as bulldozers, would not be used except in emergencies as determined on a case-by-case basis by the superintendent. All staff would receive training on appropriate strategy, tactics and precautions in desert tortoise habitat.

Fire management strategies within wilderness areas would also be determined based on the criteria discussed. Additionally, a “minimum requirement” process would continue to be used for every fire in wilderness to determine the “minimum tool or administrative practice necessary to successfully and safely accomplish the management objective with the least adverse impact on wilderness character and resources” (NPS Management Policies 6:4). The use of mechanized equipment and transport (i.e. chain saws, portable pumps, vehicles and aircraft) would remain an exception to be exercised sparingly and only when it meets the test of being the minimum necessary for wilderness purposes. The superintendent or his/her designee must approve such exceptions.

The effects of fire on components of desert ecosystems, and the extent and degree of its historic role on biota are not well understood. The National Park Service is assessing and documenting the state of existing fire effects research in desert ecosystems. Over the short-term (1–10 years) fire management strategies would be developed based on the best available science, field observations of fire effects and post-burn monitoring of selected sites. Additionally, in cooperation with other desert parks, allied federal and state land managers, agency and university research staff, the National Park Service would assess research needs and long-term studies would be initiated. Specific research topics might include fire effects on desert tortoise and its habitat, post-fire successional trends, or effective post-fire rehabilitation strategies.

### **DISTURBED LANDS**

The National Park Service would seek to perpetuate native plants and animals as part of natural ecosystems. Natural landscapes and plants would be manipulated only when necessary to achieve

approved management objectives. To the maximum extent possible, plantings in all areas would consist of species native to the park or appropriate for the period or event commemorated as outlined in the Secretary of the Interior's Standards for the Treatment of Historic Properties. Local seeds would be collected from areas as near the disturbed site as possible. If these seeds were not available an assessment would be made on the possible impacts of importing and planting seeds that may be genetically dissimilar to the native vegetation. The use of exotic species would conform to the NPS exotic species policy (NPS 2000). Landscapes and plants might be manipulated to maintain habitat for threatened or endangered species, but in natural areas, only native plants could be used if additional plantings were done. Existing plants would be manipulated in a manner designed to restore or enhance the functioning of the plant and animal community of which the endangered species is a natural part.

In natural areas, disturbances caused by natural phenomena such as landslides, earthquakes, floods, and natural fires would not be modified unless required for public safety, protection of NPS facilities, or necessary reconstruction of dispersed-use facilities, such as trails. Terrain and plants could be manipulated where necessary to restore natural conditions on lands altered by human activity.

In cultural areas, such as at Kelso Depot and Zzyzx, trees, other plants, and landscape features would be managed to reflect the historical landscape or the historical scene associated with a significant historical theme or activity.

### **Abandoned Mines**

The legacy of past mining in the Preserve has left at least 419 abandoned mine sites, with potentially thousands of mine openings and workings. Preliminary observations indicate the problem is a significant land management issue that may deserve program status. The 1992 Western Region Directive WR-085, Management of Abandoned Mineral Lands outlines the framework for a park abandoned mine lands program. The preliminary inventory of abandoned mining properties was generated from existing information in U.S. Geological Survey and Bureau of Mines databases. Additional surveys are currently underway to further inventory abandoned mineral properties. The National Park Service would complete a comprehensive inventory of all Abandoned Mine Lands to serve as a basis for future planning and reclamation program implementation. The inventory would build upon existing information from the U.S. Geological Survey, Bureau of Mines, and BLM databases. Mines would not be reclaimed until evaluated for historical significance and integrity in compliance with the National Historic Preservation Act of 1980, as amended. The program goals would include eliminating physical safety hazards and hazardous materials; mitigation of adverse environmental impacts to park resources, including the restoration of landscapes, soils and vegetation; protection of important wildlife habitat such as bat habitat; and preservation of historic and cultural resources which may include stabilization of structures.

**FIGURE 4. ABANDONED MINE LANDS**  
(8 ½ X 11 B&W LANDSCAPE MAP)

## **Hazardous Materials**

Numerous potential hazardous material sites existed within the Preserve when it was established. The National Park Service has removed hazardous materials and conducted cleanup operations on over a dozen sites, including illegal drug labs, abandoned wastes on mining claims, and illegal dumps. New sites discovered are responded to with immediate surveys and cleanup operations through licensed contractors. These locations are primarily related to mining activities where chemical processing took place, however, there are continuing instances of illegal waste dumping or clandestine drug lab activities. Potential hazards are prioritized and investigated based on relative threat posed to human health and the environment. Hazards and threats documented through this investigation process are addressed by seeking special project funding for environmental clean up work.

In addition to managing the cleanup of contaminated waste spilled from pipelines owned and operated by Unocal (Molycorp Mine) in the Mountain Pass area of the Preserve, the Preserve is currently working actively on the following hazardous waste issues:

### **Morningstar Mine**

- A formal Potentially Responsible Party (PRP) Search is underway.
- CERCLA Notice and Demand Letters have been issued.
- Lahontan Regional Water Quality Control Board is considering issuing a new Clean-up and Abatement Order (CAO) to Mojave.
- Sizeable ore piles with documented cyanide and heavy metal contamination must be stabilized and reclaimed. Pad #2 has suffered significant erosion, which could result in release of contamination beyond its containment.
- Mine owner has expressed on-going interest in re-opening the operation but has made inadequate efforts at providing NPS assurance that they are financially viable to conduct necessary restoration prior to being granted an operating permit.

### **Sterner Claims (Rainbow Wells and Columbia Mine)**

- Two locations have undergone time-critical removals in the past.
- Residual contamination has been documented at each of these locations; complete delineation and removal of this contamination is necessary. Documented lead contamination in soil ranges up to 9,700 ppm. (1,000 ppm hazardous waste threshold according to CA TTLC)
- Both locations show evidence of mining with chemical extraction conducted on site.
- Clandestine drug laboratory activity has occurred at Rainbow Wells.
- Both locations are mine sites and also act as attractive nuisances to park visitors.
- Mojave has been granted \$100,000 of project funds to address building demolition, solid waste removal, and site restoration.
- Mojave is formulating a proposal for possible cost share with the California Integrated Waste Management Board (CIWMB) to address Rainbow Wells and Columbia Mine.

### **Telegraph Mine**

- This location has potential for Hazmat removal; staff has observed: abandoned fuel tank, petroleum spills from vandalized heavy equipment, drums, small containers, process equipment, and potential cyanide ponds.
- Complete site characterization must be conducted.
- Heap Leach piles with suspected cyanide and heavy metal contamination must be stabilized and reclaimed.
- A formal Potentially Responsible Party (PRP) Search is underway.



#### Hole-in-the-Wall

- Replacement of the existing electric generator (including fuel supply system) has been requested under an equipment replacement funding source.
- Removal/remediation of contaminated soils and secondary containment area will be required.
- The existing system has suffered from damage to structural integrity (the vent reportedly failed causing the tank to become over-pressurized and bulge, spillage was associated with this event).

In addition, site assessments are planned for the following sites:

- Aiken Mine
- Reily Camp
- Kelso Dunes Mine
- Death Valley Mine
- New Trail Mine
- Rattle Snake Mine

Some of these sites may be eligible for listing on the National Register. A National Register Determination of Eligibility would be conducted before HAZMAT action is taken.

Solid waste locations are scattered throughout the Preserve. These sites are primarily associated with mining or ranching operations, but are no longer used. The National Park Service and the Bureau of Land Management have partnered with state and local agencies to inventory and respond to open dump sites within the California Desert. Occasional household hazardous materials (e.g. car batteries, used oil containers, cleaning products, paints) are typically encountered. An inventory and assessment program is underway. Some cleanups have occurred by contract, through partnerships with volunteer organizations and state agencies, and by staff participation in all employee cleanup projects.

Mojave has potentially significant issues related to transportation (highway, rail, natural gas and petroleum pipeline) incidents. Mojave would work with the transporters to develop a specific plan to address operations and responsibilities in case of a major incident. This plan would also address routine hazardous waste generation and disposal (paints, oils, etc) and incidents of illegal dumping (investigation, response and disposal).

The National Park Service is also required by Secretarial Order 3127 to conduct a site assessment for hazardous materials on all properties being considered for acquisition. This process begins with a certified inspector completing a Level I checklist. If no evidence of previous hazardous materials use exists on the property or in the county, state or federal records, the property is cleared for acquisition. If contamination is discovered or suspected, samples may be collected and analyzed at a licensed laboratory. Cleanup costs are generally considered the responsibility of the landowner.

### **NON-FEDERAL LAND AND EXTERNAL DEVELOPMENT**

#### **Land Acquisition**

The Department of the Interior policy requires that the National Park Service prepare a land protection plan for every unit of the National Park Service that has nonfederal lands or interests within its authorized boundary. The *Land Protection Plan* for Mojave National Preserve is included in this document as appendix C. Detailed descriptions of the nonfederal lands and interests are also included there.

The National Park Service would seek funds to acquire private lands and interests in the Preserve on the basis of priorities presented in the land protection plan (see appendix C). The California Desert

Protection Act (CDPA), section 516, provides the NPS authority to acquire all lands and interests in lands within the boundary of the Preserve. In May 2000, Mojave completed the purchase of most Catellus lands in the Preserve (approx. 80,706 acres) with funds appropriated by Congress and with donated funds. Donations and exchanges of real property from willing sellers would be a priority, and third-party acquisitions from willing sellers would be encouraged. Private land in wilderness, habitat for threatened or endangered species, and riparian habitat are considered high priority. Purchase of base property from willing seller ranchers is a priority over other acquisitions, in accordance with CDPA direction (section 510). Purchase of willing seller base property in desert tortoise habitat would receive first consideration. Water rights would be purchased with permit.

Private land that contains single family homes would not be considered for acquisition, unless offered by the owners, or unless development on the property is proposed or occurring that is detrimental to the integrity of the Preserve or is incompatible with the purposes of the CDPA, Title V (see Land Protection Plan for incompatible uses).

Whenever acquisitions of private land occurs, the parcel would automatically become part of the Preserve pursuant to section 517 of the CDPA, and no boundary adjustment is needed. Parcels within the boundaries of wilderness automatically become wilderness upon acquisition according to section 704.

Section 707 of the CDPA provides for the exchange of California State school land that is located within the boundaries of parks or wilderness areas. This section also provides that no federal lands in California (except military base closures) may be disposed of from federal ownership without providing the State School Lands Commission of the availability of the property. When the Preserve was established in 1994, all or portions of 88 sections totaling 51,569 acres were owned by the State. A list of these school sections was provided to the Bureau of Land Management, which is managing the exchange process. In 1998, the first exchange occurred, resulting in Mojave receiving title to portions of 22 sections totaling 15,066 acres.

### **Development on Private Lands**

Major blocks of private land are found in the Lanfair Valley area, where hundreds of parcels totaling over 70,000 acres occur (see figure 3). The remaining private lands are scattered throughout the Preserve. Total private land is approximately 85,533 acres. Approximately 200 people maintain residences in the Preserve now, with most private tracts being mostly undeveloped.

Most development on private lands is regulated by the County of San Bernardino. The county adopts and enforces land use regulations that control the type and density of land use and development on private property, and ensure adherence to basic public health and safety standards. A General Plan for the county provides guidance for acceptable development on private lands. With the exception of one parcel at Cima, the entire Preserve is zoned for resource conservation, where single family homes are allowed with minimum lot size of 40 acres.

Section 519 of the CDPA provides that private lands within the boundary of Mojave are not subject to rules and regulations that are applicable solely to federal lands. However, this section also provides that this restriction does not apply to mining, oil and gas development or Clean Air Act requirements. The National Park Service has legislated authority to regulate mining on patented mining claims and oil and gas development on private lands. Regulations are contained in 36 CFR part 9A for mining and part 9B for oil and gas.

## **External Development on Adjacent Lands**

To fulfill the mandate to preserve park resources unimpaired for future generations, adopting strategies and actions beyond park boundaries has become increasingly necessary. Because ecological processes cross park boundaries, and parks typically do not incorporate the entire ecosystem or scenic vista, many activities proposed or existing on adjacent lands have the potential to significantly affect park resources, programs, visitor experiences and wilderness values.

Recognizing these issues, the park staff would work cooperatively with others to anticipate, avoid and resolve potential conflicts and to address mutual interests in the quality of life for community residents. This strategy would include participation in local and regional planning activities of other federal, state and local agencies, tribal governments, neighboring landowners and non-governmental groups and organizations. The park would establish close ties with permitting agencies and ensure that notices of proposed development or activities are received. Park staff would review permit applications and environmental documents and determine threats to park resources or visitor experience. The park would engage constructively within this arena to identify incompatible activities in the same manner that any adjacent landowner would do. The NPS would utilize all available authorities to protect park resources and values from potential harm and would seek to mitigate adverse activities. The park would utilize this forum to promote better understanding of the park's mission and mandates, and the reasons for our concerns beyond our boundaries.

## **PARTNERSHIPS**

The National Park Service recognizes that cooperation with other land managers, tribal governments, organized groups, universities and private landowners can serve to accomplish much greater ecosystem sustainability and achievement of park management goals than actions taken solely by park staff. Therefore, the park would pursue opportunities that would result in the development of cooperative agreements and partnership agreements with stakeholders interested in assisting with the protection of park resources and providing for visitor services.

One such example is the cooperative agreement the NPS developed with the Fund for Animals. This agreement provides for this organization to accept, for purposes of adoption, of up to 300 feral burros per year, during our removal efforts. This effort provides an additional avenue for captured burros to be relocated as soon as possible, and at minimum cost to taxpayers.

## **Gateway Communities**

Communities on the access routes to the Preserve provide the best opportunity for visitors to secure food, lodging, and other services prior to enjoying their park visit. The park would encourage and support economic growth of gateway communities in ways that complement the Preserve's mission and management objectives. The park currently operates information centers in Baker and Needles, with employees living in both locations.

Some examples of agreements that could be considered include:

- Cooperative ventures to provide visitor information and services
- Zoning or planning to protect solitude, natural quiet, pristine night sky, and prevent unsightly billboards
- Sharing of data and expertise

## Research and Education

Research and education are core mission elements of the NPS national goals and of the Preserve's enabling legislation. Congress highlighted these issues in the CDPA with following passages:

These desert wildlands display unique scenic, historical, archeological, environmental, ecological, wildlife, cultural, **scientific, educational** and recreational values used and enjoyed by millions of Americans for hiking and camping, **scientific study** and scenic appreciation. (emphasis added)

Retain and enhance opportunities for scientific research in undisturbed ecosystems.

In recognition of the legislative direction and the scientific value of parks as natural laboratories, investigators would be encouraged to use the parks for scientific studies whenever such use is consistent with NPS policies and law. The Preserve would promote cooperative relationships with educational and scientific institutions and qualified individuals with specialized expertise that can provide significant assistance to the park. To the extent they are available, NPS facilities and staff assistance may be made available to qualified researchers and educational institutions conducting authorized studies or field classes.

The Preserve staff would continue to pursue partnerships with school teachers and university field offices at the Soda Springs Desert Study Center, the Granite Mountains Natural Reserve, and others to provide students and the public with current information on the cultural and natural elements of the Preserve. Where possible, field classes and seminars would be offered with assistance from California State consortium and University of California systems and other education providers. Educational programs would be expanded as staffing permits. Programs and information would be developed for visitors with little previous exposure to desert areas. Programs would seek to make resources and experiences more accessible to diverse audiences while retaining primitive conditions and protecting resources. A special educational outreach effort would be made to reach students that might otherwise not have an opportunity to visit national parks.

### Soda Springs Desert Study Center

In accordance with CDPA (section 514), a cooperative management agreement would be developed between the National Park Service and California State University (CSU) to:

- provide for the management of the facilities at the Soda Springs Desert Study Center
- ensure the continuation of desert research and educational activities, consistent with laws applicable to NPS units.

The Soda Springs Desert Study Center operates from facilities and land at Zzyzx that are owned by the federal government and are under the management authority of the NPS by virtue of their inclusion within the Mojave National Preserve. Many historic structures are located at this desert oasis, which has served as a desert research and educational facility for over twenty years. The NPS could benefit from a partnership with CSU to provide for continued maintenance and security of the facilities, offering of educational activities on desert resources for the public, and to attract scientific interests to pursue research in the Preserve.

A cooperative agreement would be used to define each entity's roles and responsibilities under the following guidance and framework:

- the NPS is ultimately responsible for the protection and management of all natural and cultural resources

- general public use and visitor access to the site would be supported, with opportunities for interpretation, self-guided trails and programs encouraged
- the Preserve would retain oversight and permitting responsibility for research and educational use
- the Preserve would retain authority and responsibility for law enforcement, interpretation and environmental education
- CSU would retain maintenance and security responsibility for most buildings and structures
- Modifications to existing structures or the addition of new structures may not occur without NPS permitting and compliance
- Mojave would have access to the facilities for public or agency functions
- a site management plan would be developed in cooperation with CSU
- a cooperative agreement with California Fish and Game, Fish and Wildlife Service, CSU and the NPS would be pursued to establish management goals, activities and responsibilities regarding the endangered Mohave tui chub population of fish

### **Granite Mountains Natural Reserve**

In accordance with CDPA, section 513, a cooperative management agreement has been developed between the National Park Service and the University of California to:

- provide for the management of lands within the Granite Mountains Natural Reserve
- to ensure the continuation of arid lands research and educational activities, consistent with laws applicable to NPS units.

The Granite Mountains Natural Reserve is a 9,000-acre area in the southeast corner of the Preserve recognized by Congress in the CDPA. The University of California owns fee title to 2,200 acres of the Reserve, while most of the remainder is owned by the federal government and managed by the National Park Service. A 20-acre patented mining claim is also privately held inside the reserve.

The University of California owns and maintains a series of reserves throughout California. The purpose of these reserves is to manage, protect and preserve sites that are undisturbed examples of California's extraordinary and diverse habitats for long term scientific research and for public education. On federal lands, this state purpose must be balanced with the park purpose and mission of protecting resources for visitor enjoyment. The National Park Service strongly supports and encourages the use of the Reserve for research and educational activities, consistent with applicable laws and regulations.

The designated wilderness within the reserve would be managed for wilderness values. The discharge of weapons in the natural reserve would continue to be prohibited by San Bernardino county ordinance and the National Park Service.

The objectives of the cooperative management agreement are:

- To develop, coordinate and implement research, inventorying and monitoring, and public education programs and projects to protect, restore and explain the natural, cultural, recreational and wilderness resources of the park and the Mojave desert ecosystem.
- To develop scientific knowledge through research to guide management decisions concerning the conservation, preservation and restoration of natural, cultural and recreational resources of the park and the Mojave desert ecosystem.
- To ensure continuation of the University's arid lands research and educational activities.

- To develop, coordinate and implement, as may be jointly agreed to, a general program of education and public outreach related to the educational and research needs of the University and the resource management and interpretive needs of the park.
- To make available to each other, when mutually agreed to and in accordance with the provisions of this agreement, assistance and support, including but not limited to, funds, supplies, equipment, facilities, staff, etc. to carry out programs, projects and activities related to the objectives and purposes of the agreement.

The National Park Service recognizes the concern with protection of long term research plots, and would work with the research community to address issues and concerns associated with their research and educational activities in the Preserve and the natural reserve.

### **Cooperative Ecosystem Studies Units**

The National Park Service has had a long history of association with universities near parks to promote research and educational activities in parks. One such unit has been located on the campus of the University of Nevada at Las Vegas for over 25 years. These units were once staffed by NPS scientists. These scientists now work for the Biological Resources Division of the U.S. Geological Survey, and the mission has evolved to be broader in scope than just parks. The new concept of Cooperative Ecosystem Studies Units (CESU) is being pursued nationally, with the goal of four new units being established in FY 2000. One of these new units was recently established at the University of Arizona to serve the southwest desert area. Mojave supports the retention of the existing CESU at UNLV, and embraces the newer CESU concept, and would utilize them as one mechanism to provide research, inventory and monitoring capabilities to meet park objectives.

### **California Department of Parks and Recreation**

#### **Providence Mountains State Recreation Area (Mitchell Caverns)**

Within the boundary of Mojave National Preserve is the Providence Mountains State Recreation Area, managed and operated by the State of California. The prime attraction is Mitchell Caverns, where guided tours are offered. A developed campground with six campsites and RV camping is also available. The National Park Service has a statewide cooperative agreement with the Department of Parks and Recreation that addresses cooperative management issues at several locations throughout California. The Preserve would also seek to develop a local partnership with the State to:

- share staff, expertise, facilities and other resources for cooperative resource management, interpretation, law enforcement and maintenance activities.
- share radio system repeater sites and equipment
- collaborate on signing on interstates and park roads
- collaborate on planning efforts for visitor service programs

### **NATIVE AMERICAN INTERESTS AND RELATIONSHIPS**

#### **Tribal Relationships**

The necessity for consulting with American Indians arises from the historic as well as current government-to-government relationship of the federal government with them and from the related federal trust responsibility to help conserve tribal resources. Tribal sovereignty is involved and

supported by the government-to-government relationship. The government-to-government relationship stems from treaties, laws, and other legal entities, including presidential executive orders, proclamations, and memorandums; federal regulations; and agency management policies and directives. Examples are:

- The Native American Graves Protection and Repatriation Act of 1990 (Public Law 101-601);
- The National Historic Preservation Act of 1966 (Public Law 89-665, as amended by Public Law 102-575);
- The Indian Self-Determination Act and Education Assistance Act of 1975 (Public Law 93-638 and Public Laws 103-413, 103-435, and 103-437);
- The Presidential Memorandum entitled “Government-to-Government Relations With Native American Tribal Governments” (April 29, 1994) and Executive Order 13007 “Indian Sacred Sites” (May 24, 1996).

In the conduct of government-to-government relations, National Preserve managers aim for effective communication and the sharing of information and knowledge about mutual interests in Preserve planning and operations and in managing cultural and natural resources. Thus, the National Park Service would consult on a regular basis with historically affiliated tribes to accomplish its programs in ways that respect their traditions, beliefs, practices, and other cultural values. NPS staff would continue to work with the tribes in ways such as the following:

- Consulting on any future National Preserve planning documents
- Consulting on National Preserve operations as they may affect any economic interests of the tribes
- Consulting on National Preserve operations as they may affect any joint law enforcement efforts or other intergovernmental concerns
- Consulting on resource management, especially cultural resource management such as identifying and protecting archeological and ethnographic sites
- Consulting on cultural matters, such as National Preserve interpretation of Indian history and heritage

Any archeological, ethnographic, and historical collections of Mojave National Preserve would be managed in accordance with the *NPS Management Policies* (2000), its *Museum Handbook* (1998); and its *Cultural Resource Management Guidance* (Director’s Order 28: 1998). Any human remains of Indian affiliation found within the National Preserve, now and in the future, would be treated under the regulations of the Native American Graves Protection and Repatriation Act of 1990, as would any artifacts of possible cultural patrimony. The Director’s Order 71, *Relationships with American Indians and Alaska Natives* (1999), is also being developed and would provide overall guidance.

The National Park Service recognizes the importance of the cultural resources that are within the National Preserve boundaries to the local American Indian peoples. Accordingly, the National Park Service will continue to coordinate its management of these resources with the appropriate tribal officials and to consult with them on any matters that might affect their interests. The National Park Service also recognizes the economic impact that its management decisions could have on the tribes and will continue to work and consult with the tribes on a government-to-government basis to ensure that their interests in these areas are properly considered before any relevant NPS decisions are made.

### **Traditional Cultural and Religious Activities**

Section 705 of the California Desert Protection Act recognizes past uses of parks and wilderness areas by Indian people for traditional cultural and religious purposes, and ensures access for these uses. The Act also provides for temporary closures to the general public, upon request of an Indian tribe or Indian religious community, of one or more specific portions of the park or wilderness area in order to protect the privacy of such activities. Any closures are to be for the smallest area practicable and for the minimum necessary period. Access must be consistent with the purpose and intent of the American Indian Religious Freedom Act (Public Law 95-341; 42 U.S.C. 1996), and the Wilderness Act, if applicable.

### **Sacred Sites**

Executive Order 13007, entitled “Indian Sacred Sites,” states that each federal government agency with responsibility for the management of federal lands “shall, to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions (1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners, and (2) avoid adversely affecting the physical integrity of such sacred sites.” As part of its ongoing dialogue with the tribal governments and communities historically associated with lands in and near the Preserve, the National Park Service will seek to identify, preserve, and manage sacred sites.

### **Indian Trust Resources**

The federal government is obligated to protect, conserve, and manage Indian trust lands, water and fishing interests, and traditional use areas and other trust resources. Secretarial Order 3175, “Departmental Responsibilities for Indian Trust Resources (August 17, 1994),” required each bureau and office in the Department of the Interior to identify potential effects of departmental activities upon Indian trust resources and mandated meaningful consultation with tribes where activities directly or indirectly affect these resources. Responding to this order, the National Park Service adopted a document, “Carrying Out the Government-to-Government Relationship with American Indians and Alaska Natives in the National Park Service” (October 12, 1995), committing the NPS to a policy of interacting directly with tribal governments regarding the potential impacts of proposed Service activities on Indian tribes and trust resources.

As part of its ongoing dialogue with the tribal governments and communities historically associated with lands in or near the Preserve, the National Park Service would seek to identify, preserve, and manage “Indian trust resources” as specified in the aforementioned departmental order and corresponding NPS policy document.

## **NATURAL RESOURCES**

### **Resource Protection Goals and Criteria**

Specific resource protection goals and criteria have not yet been established. Management of the Preserve’s resources is currently guided by direction provided in the enabling legislation and NPS regulations and policies. A set of protection goals and criteria would be developed through the inventory and monitoring program to establish a standard set of resource protection guidelines.

### **Inventorying and Monitoring**

Inventorying and monitoring of the Preserve’s natural and cultural resources is necessary to gain a more complete understanding of their value and condition. Mojave would assemble baseline inventory data describing the natural and cultural resources under its stewardship, and will monitor the resources at



regular intervals to detect or predict changes. The resulting information will be analyzed to detect changes that may require intervention and to provide reference points for comparison with other, more altered environments. Mojave would also use this information to maintain — and, where necessary, restore — the integrity of natural systems, and to protect the public, park staff, and the park infrastructure.

Project priorities are determined on the basis of existing staff availability and funding. An annual performance plan is prepared annually that provides goals, objectives, and annual work plans. Mojave's strategic plan also establishes five-year goals that provide a limited view of resource issues and allocation of staffing and funding.

Mojave would develop and implement a systematic, integrated program to identify, inventory, and monitor its natural and cultural resources. This program would be developed through collaborative partnerships with government agencies and public and private organizations with natural and cultural resource management or research expertise. A comprehensive strategy would be developed and implemented to ensure that regional, local or national trends are documented and appropriate actions undertaken. The National Park Service has identified twelve data sets that each park unit should collect in order to have a basic understanding of their resources. Mojave is actively working in cooperation with other desert parks on an integrated inventory and monitoring strategy, using the vital signs approach.

An example of a needed inventory would be a biological inventory of all spring and wetland areas on Preserve lands, including the identification of threats, impacts, and necessary protections. Included in the inventory would be recommendations for restoration. In addition to federal lands, the National Park Service would work with private holders of water rights to restore modified water sources to natural conditions while still allowing for valid existing uses.

The Bureau of Land Management established long-term monitoring areas in the Ivanpah Valley and near Colton Hills. These are fenced areas that have precluded cattle and burro grazing for many years. Dr. Hal Avery of the Biological Resource Division, USGS, Riverside, California, is presently conducting research and monitoring of the desert tortoise the Ivanpah area. A reexamination of the plant growth within and outside of Colton Hills enclosure has not been conducted for almost 20 years. This area has been segregated from large mammal grazing pressure for over 30 years and may be used to measure the effects of grazing on the desert environment. Mojave would consult with the research community regarding the benefits of retaining these exclosures if the cattle grazing permits are retired.

### **ENVIRONMENTAL COMPLIANCE RESPONSIBILITIES**

Every action taken or plan proposed by the National Park Service (NPS) that could affect natural resources or the quality of the human environment is subject to a host of laws and regulations designed to protect and enhance the environment. These laws and regulations constitute Mojave's environmental compliance responsibilities.

#### **National Environmental Policy Act**

The National Environmental Policy Act of 1969, Public Law 91-190, (NEPA) declared a national environmental policy; created a formal, legal process for integrating environmental values into federal decision-making; and provided an umbrella under which compliance with several environmental laws can be integrated.

NEPA states as policy that the federal government will “use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic and other requirements of present and future generations of Americans.” It specifically directs federal agencies to include in every recommendation or report on proposals for legislation and other major federal actions significantly affecting the quality of the human environment, “a detailed statement on the environmental impact of the proposed action, any adverse environmental effects which cannot be avoided should the proposal be implemented, and alternatives to the proposed action.”

Title II of NEPA established the Council on Environmental Quality, charged with the implementation and oversight of NEPA. The Council subsequently developed regulations (40 CFR 1500-1508) that all federal agencies must follow in examining the environmental effects of proposed actions. These procedures involve three possible levels of documentation and analysis: 1) categorical exclusions; 2) environmental assessments; and 3) environmental impact statements.

Categorical exclusions are types of actions that do not individually or cumulatively have a significant effect on the human environment. The Department of the Interior and the National Park Service maintain lists of actions that are categorically excluded from further NEPA analysis. These lists are published in the Department Manual, Appendix 7. Examples of NPS categorical exclusions include commercial use licenses involving no construction; installations of signs and displays; and upgrading or adding new overhead utility facilities to existing poles. Actions that are categorically excluded are analyzed, documented and placed in park files.

If a categorical exclusion is not appropriate on a given project, the next level of NEPA compliance documentation that is completed is the environmental assessment. Environmental assessments must contain an explanation of the need for the proposal, a description of the affected environment, the environmental impacts of the proposal and any alternatives, and a listing of persons and agencies consulted. Public notice of availability of the assessment is provided. If, from the assessment and any public review, a determination can be made that there will be no significant impacts and that all potentially significant impacts can be mitigated, then a “finding of no significant impact” can be issued. If the significant effects cannot be mitigated and if the proposal is to move forward, an environmental impact statement must be prepared.

Environmental impact statements have a more detailed format and public review requirements than environmental assessments, and are generally more lengthy. The scoping process, which is optional under environmental assessments, is required for an environmental impact statement. Comments from federal, state, and local agencies and Indian American tribes, along with substantive comments from the public, are answered in the final document, and any necessary changes resulting from the public review are made. At the conclusion of the process, a record of decision is issued that states the decision, the alternatives considered, the factors involved in the final selection, and any mitigation measures required. With the issuance of the record of decision, the action may proceed, unless challenged in court.

In the National Park Service, construction activities, natural or cultural resource management projects, actions on external proposals such as rights-of-way and mining plans of operation, and park plans trigger the majority of NEPA analyses.

Numerous environmental laws, regulations, policies, and executive orders fall under the NEPA “umbrella,” the most important of which to Mojave are listed below.

### **Endangered Species Act of 1973 (Public Law 93-205)**

The Endangered Species Act of 1973 (ESA) calls for the preservation and recovery of threatened and endangered species and their habitat. Some of the most important provisions of the act, as amended in 1978, 1982, and 1998 are:

Section 3 gives legal definition to the terms “threatened” and “endangered.” “Endangered species” means “any species which is in danger of extinction throughout all or a significant portion of its range.” “Threatened species” means “any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.”

Section 7 requires federal agencies to consult with the U.S. Fish and Wildlife Service if their activities may affect a listed species, and requires the agencies to develop programs for the conservation of listed species (50 CFR 402 provides details on the consultation process).

Section 9 contains “taking” prohibitions for endangered animal species. The term “take” means to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt to engage in any such conduct.”

The ESA also requires the U.S. Fish and Wildlife Service to develop recovery plans designed to increase the populations of threatened and endangered species to the point where they could be removed from the list.

Due to the presence of the threatened desert tortoise, the ESA is a law that pervades nearly all actions taken within Mojave.

Other laws that Mojave must consider as part of its regular environmental compliance responsibilities include the Clean Air Act, the Clean Water Act, and the Wilderness Act. In addition, Mojave must comply with laws and regulations that pertain to cultural resources (See Cultural Resources section below).

## **CULTURAL RESOURCES**

### **Baseline Data**

The National Park Service would develop and implement a systematic applied cultural resource research program to ensure that (1) there would be adequate baseline information on location, condition, threats, and significance/integrity of resources; (2) interpretation and preservation treatment of resources would be accurate; and (3) appropriate means would be used to manage, protect, preserve, and interpret Native American heritage or other ethnographic resources. The research program would include the following studies:

- archeological studies, including a regionally based Archeological Research Plan, an Archeological Overview and Assessment, and archeological identification and evaluation studies
- ethnographic studies, including an Ethnographic Overview and Assessment, a Cultural Sites Inventory, and Cultural Affiliation Studies
- Historic Resources Studies (including possible separate studies of ranching, mining, transportation, and military use), Historic Structure Reports, Historic Furnishings Plans, an Administrative History, and special history studies. A historic resources study is an illustrated narrative history and normally is accompanied by draft National Register forms together with requisite maps and photographs for

all properties identified within the study as meeting National Register Criteria, while the study itself identifies those which lack either sufficient age, or integrity, or significance, and thus have been evaluated as not qualifying for the National Register. The Historic Resource Study should evaluate privately-owned properties within the Preserve without preparation of NR forms so that should such properties later be acquired or be potentially affected by some Federal action, their status will already have been evaluated. Mojave National Preserve is so large an area and current funding for historic resource studies comes in such small amounts that it will be necessary to schedule a series of historic resource studies, each focused on a different topic, to cover the history of the resources within the Preserve: (1) mining; (2) ranching; (3) Homesteading (4) Exploration; (5) transportation routes (trails [Old Spanish Trail], wagon roads [Beale's Road, Mojave Road], railroads, automobile roads [Route 66], etc.) and communication facilities; (6) settlements and towns; (7) Military camps, Patton's Desert Training Center facilities, and Desert Strike training (1964); (8) Military operations against Desert Indians; (9) Prohibition and law enforcement; miscellaneous other topics not covered by the foregoing Recreation] etc.

- a Scope of Collections Statement and a Collection Management Plan
- Revising the List of Classified Structures, Cultural Landscape Inventories, evaluations, and assessments with emphasis on themes of the history of western exploration and settlement, mining, ranching, and railroading

### **Archeological Resources**

Mojave National Preserve will seek to identify, protect, preserve, and interpret archeological resources under its jurisdiction.

Archeological resources occur in almost every unit of the national park system. What makes archeological resources significant are their identity, age, location, and context in conjunction with their capacity to reveal information through the investigatory research designs, methods, and scientific techniques used by archeologists. Such resources are critical to understanding and interpreting American prehistory and history; however, archeological resources are fragile and may be easily destroyed unless proper attention is paid to their management as mandated by the following federal laws and policies, and their respective implementing regulations, standards, and guidelines:

- NPS Management Policies (draft 2001)
- Antiquities Act of 1906 (Public Law 59-209; 16 U.S.C. 431-33)
- Sections 106 and 110 of the National Historic Preservation Act of 1966 (Public Law 89-665, as amended in 1980 and 1992, Public Law 102-575, 16 U.S.C. 470)
- Archeological and Historic Preservation Act (legal citation)
- Archeological Resources Protection Act of 1979 (Public Law 96-95; 16 U.S.C. 470)
- Abandoned Shipwreck Act (Public Law 100-298; 43 U.S.C. 2101)
- Native American Graves Protection and Repatriation Act of 1990 (Public Law 101-601; 25 U.S.C. 3001)

There is significant documentation of archeological information at Mojave which continues to expand. Since 1997, Mojave has been developing an archeological sites management inventory system (ASMIS). The ASMIS database is the NPS standard database for archeological resources and provides data necessary to complete GPRA reporting requirements. All Mojave archeological base maps on file in San Bernardino have been digitized. Archeological and project data collected up to 1999 (approximately 1,300 sites) has been entered in the database. All available site files have been scanned,

verified, and entered in the database. A GIS has been created to integrate all available data through a series of custom tools in ArcView. ASMIS is the only electronic site database for national parks in California like Mojave.

In 1996 the California Historical Resources Information System (CHRIS) was initiated, with the support of the Desert Managers Group, for the development of an Internet-based GIS application for the digitizing archeological information available in the California Information Centers. A massive undertaking, thus far CHRIS has digitized all the base maps at the San Bernardino Information Center.

### **List of Classified Structures**

The List of Classified Structures (LCS) is a park's computerized inventory of known historic and prehistoric structures having historical, architectural, or engineering significance in which the NPS has, or plans to acquire, any legal interest. Properties included in the LCS are either on or eligible to the National Register or are to be treated as cultural resources by law, policy, or decision reached through the planning process even though they do not meet all National Register requirements. The LCS documents significance, condition, use, threats, treatments, cost estimates for treatment, and physical description. Seventy-two structures are currently listed in the Preserve's LCS. (See "Affected Environment" section). This list is a preliminary list and will be maintained and updated as necessary to reflect current research, surveys and interpretations.

### **Cultural Landscapes**

The Cultural Landscape Inventory (CLI) is an evaluated inventory of all cultural landscapes (landscapes, component landscapes, landscape features, and component landscape features) having historic significance in which the National Park Service has or plans to acquire legal interest. The CLI provides the baseline information for a cultural landscape. As such, the CLI assists park managers and cultural resource specialists in planning, programming, and recording treatment and management of listed landscapes. The Cultural Landscape Inventory has three primary functions:

- To identify and inventory cultural landscapes in a national data base,
- To record information about these resources related to their identification, location, description, characteristics, historical development and current management, and
- To provide park staff with the information necessary to make informed decisions about appropriate treatment of these cultural resources.

A Cultural Landscape Report (CLR) serves two important functions; it is the principal treatment document for cultural landscapes and the primary tool for long-term management of those landscapes. A CLR guides management and treatment decisions about a landscape's physical attributes, biotic systems, and use when that use contributes to historical significance. A comprehensive Cultural Landscape Report has three parts, which include:

- A site history with maps, a description of the existing conditions, and an analysis and evaluation of the identified resources,
- Proposed treatment of the landscape, and
- A record of treatment for that landscape

At least sixteen potential historic landscapes have been identified in Mojave National Preserve that are potentially eligible for listing on the National Register of Historic Places, but cultural landscape studies have not been undertaken to identify their character-defining elements. Landscapes reflecting mining, ranching, railroading, and ethnographic activities can be seen throughout the Preserve. The Preserve

would inventory the cultural landscapes and prepare nomination for those determined to be eligible for the National Register of Historic Places.

A Cultural Landscape Inventory of the Kelso Club House and Restaurant Historic District is underway and will be completed in FY2000. A Cultural Landscape Inventory of the Soda Springs Historic District will be commenced in FY2000. Landscapes reflecting significant mining, ranching, railroading, and ethnographic activities can be seen throughout the Preserve.

The basic cultural landscape inventories have been completed for:

- Zzyzx Mineral Springs Historic District (Draft Nomination) (Landscape)
- Kelso Depot Historic District (Draft Nomination) (Landscape)
- Mojave Road (Landscape)

Potentially Significant Landscapes that would be evaluated:

- Marl Springs
- Rock Springs
- Paiute Pass (feature)
- New York Hills Historic District (1890' s) (Landscape)
- Death Valley Mine (Landscape)
- Vanderbilt Site (Component)
- Providence Mountains Historic District (Landscape)
- Foshay Pass (Feature)
- Macedonia Mining District (Landscape)
- Rock Springs/Government Holes (Component)
- Ivanpah Historic District (Landscape)
- Ivanpah (Component)
- Clark Mountain Mining District (Landscape)
- General Patton' s Desert Training Center (Camp Essex) (Landscape)
- Lanfair Valley (Landscape with multiple owners)

Given the following historic landscapes are not managed by the NPS there are no plans to evaluate these resources for possible listing:

- Union Pacific Los Angeles to Salt Lake City Line (Landscape)
- Boulder Transmission Line (Landscape)
- Mitchell Caverns (Landscape)

### **National Register Properties**

Authorized by the National Historic Preservation Act of 1966 and administered by the NPS in the National Center for Cultural Resources Stewardship and Partnership Programs, the National Register is the nation' s official list of districts, sites, buildings, structures, landscapes and objects in both public and private ownership that are significant in American history, architecture, archeology, engineering, and culture. Section 110 of the NHPA mandates that all federal properties that are over 50 years of age must be inventoried and evaluated for eligibility to the National Register. It further directs that those properties over 50 years of age that have not yet been evaluated be treated as though they were eligible to the National Register until documented as non-eligible.

The following properties within Mojave NP are listed on the National Register:

- Piute Pass Archeological District
- Aikens Wash National Register District
- Historic Boulder Transmission Lines 1, 2, and 3 Archeological District

The following properties have been determined to be eligible to the National Register:

- Kelso Depot

A national register nomination form has been prepared for the Kelso Depot and is currently being reviewed.

The following properties have been determined to be potentially eligible to the National Register and National Register nomination forms are being prepared for them:

- Soda Springs Historic District
- Mojave Road
- Rock House

The Historic Resources Study, scheduled for completion by 2005, will identify additional properties that may be nominated to the National Register such as the Ivanpah and Providence townsites and the Death Valley Mine.

If the Soda Springs Historic District is determined to be eligible to the National Register, management of the facility could be affected. The National Park Service will produce a Cultural Landscape Report/Historic Structures Report that would specify the historic preservation treatments for the various historic structures and cultural landscape elements at Soda Springs that were associated with Dr. Springer and the Zzyzx Mineral Springs (see Affected Environment for a complete description). The report may recommend the preparation of development concept plans for the coordination of new and existing facilities to better support current and proposed operations.

A National Register nomination form has been prepared for the Kelso Depot. A Historic Structure Report containing history, archeology and architecture sections, and both historic, HABS, and other recent drawings has been completed and published on the Kelso Depot. A Historic Furnishings Report for the Kelso Depot is in progress for certain rooms that it is proposed will be refurnished to their historic appearance.

As a result of the series of historic resource studies, a large number of other properties, including numerous ranches, homesteads, townsites, railroad stations, mines, springs, and ranching developments may be evaluated for their historical significance and integrity.

### **Ethnography**

Attention to the peoples whose lifeways are traditionally associated with resources under National Park Service stewardship is mandated in legislation and the NPS *Management Policies* (2000). Ethnography, part of cultural anthropology, is concerned with the peoples associated with parks, with their cultural systems or ways of life, and with the related technology, sites, structures, other material features, and natural resources. In addition to traditional regimes for resource use and family and community economic and social features, cultural systems include expressive elements that celebrate or record significant events and may carry considerable symbolic and emotional weight. These include rituals, sacred narratives such as origin myths, verbal arts including folk tales, and performing and graphic arts. Cultural anthropologists refer to behavioral, value, and expressive patterns, and technology, as features

of cultural systems. Preservation specialists may use the term “intangible” to refer to behavior, values, and expressive culture.

Developing programs, policies, guidelines, and data to help Preserve management identify and protect culturally significant resources falls to the Preserve’s applied ethnography program. A major goal is to facilitate collaborative relationships between the NPS and the people, including Native American groups and the ranching and grazing communities in the Preserve area, whose customary ways of life affect, and are affected by, NPS resource management. Seeking practical outcomes, the program identifies issues that concern management, communities, and the resources they both value and provides information to promote mutually acceptable solutions.

While no ethnographic or traditional cultural properties have been identified in the Preserve, this may change during future dialogues, between NPS staff, the Native American tribes, and the ranching and grazing communities.

### **Collections Management**

The National Park Service would prepare a scope of collections statement and a collection management plan to address and document the management, protection, preservation, and use of natural and cultural specimens, objects, documents, photographs or electronic media in accordance with the provisions of NPS *Director’s Order 77*. The scope of collections statement would address the significance of the collections and set limits on collections consistent with the park’s mission, purpose and identified themes in its interpretive prospectus. It would also address collections generated by research, resource management, and compliance activities. The collection management plan would document and evaluate alternative approaches to management, preservation, and protection of collections identified in the scope of collections statement. Alternatives would include developing in-house collection management capability, with a museum storage facility, or developing cooperative agreements with other park units, other federal agencies, or universities and museums. Mojave staff are currently working with the Pacific Great Basin and Columbia Cascades staff curators and the Death Valley National Park curators regarding these alternatives and other curatorial planning needs. Curatorial storage preference would be given to local facilities that would be more readily accessible to park staff and researchers.

The Preserve has existing collections onsite; they include the library, a growing collection of paper and photographic archives, and a few historic items from Kelso Depot. Archeological materials emanating from compliance activities currently are stored at WACC. A recently purchased collection of Chemehuevi baskets is being curated at Death Valley National Park. Future acquisitions may include archeological collections, historical collections relating to mining, ranching/homesteading, native and ethnographic communities, and modern military exercises; and contemporary items associated with recreation/tourism (for example, Soda Springs).

### **Compliance Responsibilities**

As part of its stewardship, the National Park Service is mandated by Congress to preserve and protect resources within its jurisdiction. The Organic Act of 1916, as amended by U.S.C.1a-5, which created the Service, was enacted:

To conserve the scenery and the natural and historic objects and wild life therein and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations (Act of August 25, 1916).

Other federal legislation that also applies to cultural resources:



- Antiquities Act of 1906 (Public Law 59-209; 16 U.S.C. 431-33)
- National Historic Preservation Act of 1966 (Public Law 89-665, as amended in 1980 and 1992, Public Law 102-575, 16 U.S.C. 470)
- National Environmental Policy Act of 1969, as amended (Public Law 91-190; 42 U.S.C. 4321, 4331, 4332)
- Archeological Resources Protection Act of 1979 (Public Law 96-95; 16 U.S.C. 470)
- Native American Graves Protection and Repatriation Act of 1990 (Public Law 101-601; 25 U.S.C. 3001)

In addition, the management of cultural resources is guided by:

- Advisory Council on Historic Preservation's implementing regulations (36 CFR Part 800) "Protection of Historic Properties"
- *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995)
- National Park Service's *Management Policies*
- National Park Service's Director's Order 28 (1998)
- 1995 "Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers."

The National Park Service, in conjunction with the Chemehuevi, Mohave, and Las Vegas Piute tribes, and the San Manuel Tribal Community, strives to survey, inventory, and evaluate all cultural resources on lands under its jurisdiction, that is, all archeological, historic, and ethnographic resources. Section 110 of the National Historic Preservation Act requires that historic properties be identified and evaluated for their eligibility for listing in the National Register of Historic Places. Section 110 also stipulates that historic properties be managed in a way that preserves and protects their historic and cultural values, especially nationally significant values.

Section 106 of the National Historic Preservation Act of 1966 requires that federal agencies consider the effects of their actions on historic properties and that they seek comments from the state historic preservation officer and, if necessary, the Advisory Council on Historic Preservation. Amendments to 36 CFR 800 in 1999 strengthen the requirement to provide the public an opportunity to comment on agency actions. The purpose of section 106 is to avoid harm to historic properties or other cultural resources either listed in or eligible for listing in the National Register of Historic Places and to afford the state historic preservation officer and the Advisory Council an opportunity to comment and advise, especially if mitigation becomes necessary.

The National Park Service also consults with the tribal historic preservation officers on all matters affecting cultural resources. Native American consultations honor in particular the government-to-government relationship between the United States of America and those tribal entities that are historically associated with the lands in the Preserve. Thus, the National Park Service is consulting with the tribal governments of the aforementioned neighboring American Indian peoples through their duly elected representatives.

The necessity for consulting with American Indians and other Native Americans arises from the historic as well as current government-to-government relationship of the federal government with them and from the related federal trust responsibility to help conserve tribal resources. Tribal sovereignty is involved and supported by the government-to-government relationship. The government-to-government relationship stems from treaties, laws, and other legal entities, including presidential executive orders, proclamations, and memorandums; federal regulations; and agency management policies and directives. Examples are the Native American Graves Protection and Repatriation Act of 1990 (Public Law 101-

601); the National Historic Preservation Act of 1966 (Public Law 89-665); as amended, most recently in 1992 (Public Law 102-575); the 1994 amendments (Public Laws 103-413, 103-435, and 103-437) to the Indian Self-Determination and Education Assistance Act of 1975 (Public Law 93-638); the Presidential Memorandum of April 29, 1994, entitled “Government-to-Government Relations With Native American Tribal Governments”; and Executive Order 13007 of May 24, 1996, entitled “Indian Sacred Sites.”

## **RESEARCH AND EDUCATIONAL ACTIVITIES**

Research and education are core mission elements of the NPS national goals and of the Preserve’s enabling legislation. Congress highlighted these issues in the CDPA with following passages:

These desert wildlands display unique scenic, historical, archeological, environmental, ecological, wildlife, cultural, **scientific, educational** and recreational values used and enjoyed by millions of Americans for hiking and camping, **scientific study** and scenic appreciation. (emphasis added)

Retain and enhance opportunities for scientific research in undisturbed ecosystems.

### **Education**

One of the missions of the NPS is to conduct educational outreach on natural and cultural resource preservation and management. These outreach efforts extend beyond the park boundary to include classrooms of local schools in and around the park unit. Reaching youth in the classroom and educating them on resource preservation and management serves to protect parks from impacts associated with uniformed visitors pursuing activities that may harm park resources. This effort can do more to protect parks through education than an equivalent number of staff simply enforcing regulations in the park.

To fulfill this part of our mission, Mojave would maintain an active presence in local classrooms throughout the high desert. Park staff in Needles, Baker and Barstow would be made available to make presentations on particular resource topics or to teach natural or cultural resource sessions as part of a resource preservation curriculum.

Parks also serve as ideal classrooms for students to learn about the natural and cultural resource values of the desert. Setting foot on sand dunes, or a cinder cone, or hiking through the Joshua tree forest on Cima Dome, are experiences that cannot be duplicated with video, slides or other means. Mojave National Preserve is an ideal natural classroom for school groups anywhere to experience and study the Mojave Desert.

To encourage school use, Mojave would provide staff to lead specific ranger walks and talks for school groups as requested. The park would also offer educational activities for school groups at the Kelso Depot visitor center when this facility is operational. Schools would also be encouraged to utilize the park for extended classroom work, such as week long classes over spring break, where schools may bring a class and conduct an entire field class focusing on desert resources.

The University of California through the Granite Mountains Natural Reserve, and California State universities through the Soda Springs Desert Study Center, already promote school educational activities and offer specific classes for students and the general public via cooperative agreements with the park. These efforts would be encouraged and supported by the park by offering staff to assist in conducting specific activities for school groups, providing ranger led walks and talks, and by seeking grants to assist in offering these activities, particularly for low economic areas where schools would normally not be able to afford field trips.

## **Research and Permits**

In recognition of the legislative direction and the scientific value of parks as natural laboratories, researchers would be encouraged to use the parks for scientific studies, whenever such use is consistent with NPS policies and law. The Preserve would promote cooperative relationships with educational and scientific institutions and qualified individuals with specialized expertise that can provide significant assistance to the park. To the extent they are available, NPS facilities and staff assistance may be made available to qualified researchers and educational institutions conducting authorized studies or field classes. Mojave would cooperate with researchers and universities to identify methods and techniques that may be employed to ensure protection of research equipment and plots.

Non-NPS studies are not required to address specifically identified NPS management issues or information needs. However, these studies, including data and specimen collection, require an NPS research/collecting permit. The studies must conform to NPS policies and guidelines regarding publication of data, conduct of studies, wilderness restrictions, and park-specific requirements pursuant to the terms and conditions of the permit. Projects must be administered and conducted only by fully qualified personnel, and conform to current standards of scholarship. NPS research/collecting permits may include requirements that permittees provide for parks, within certain timeframes, the appropriate field notes, data, information about the data, progress reports, interim and final reports, and publications derived from the permitted activities.

The National Park Service would be responsible for the review and approval of all proposals for research on Preserve lands to ensure that they conform to the management policies and the provisions of 36 CFR 2.5. The superintendent would issue permits for all research and collection. Published research results would be provided to the park as a condition of all permits and be made available for use by park staff and the public.

## **Natural Resource Collections**

Natural resource collections, including non-living and living specimens, and their associated field records, are managed as NPS museum collections. Guidance for collecting and managing specimens and associated field records is found in 36 CFR 2.5 and NPS guidance documents, including the museum handbook. Generally, collecting in Mojave would not be permitted if specimens could be obtained elsewhere. Living collections would be managed in accordance with the provisions of a park's resource management plan (when developed), the Federal Animal Welfare Act, and other appropriate requirements. With respect to paleontological resources, any rare or scientifically significant specimens would be collected, or stabilized and protected in situ. Associated scientific data, including geographic, geologic, and stratigraphic information, would be documented with all fossil collecting activities. Paleontological specimens are also subject to the treatment policies for museum objects.

Commercial application of any specimens, including any components of specimens (natural organisms, enzymes, genetic materials or seeds) collected under an NPS collecting permit must be done in accordance with a cooperative research and development agreement (CRADA). Research results derived from collected specimens are to be used for scientific or educational purposes only and may not be used for commercial purposes unless the permittee has entered into a CRADA with the park. Any commercial products produced would be subject to a royalty of 10%. Sale of collected research specimens or other transfer to third parties is prohibited (Solicitor Memo date 11/3/98).

### **SUSTAINABLE DESIGN**

The Congressional mandate to the National Park Service has been expressed as conserving resources while providing for their enjoyment by the public in a manner that would leave them unimpaired for future generations. This concept can best be expressed today as *sustainability*, which is defined simply as making decisions and engaging in practices that meet the needs of the present generation, without compromising the ability of the next generation to meet its needs. The National Park Service has issued, and would update as necessary, guiding principles for sustainable design that would be applied throughout the Preserve.

Mojave would implement sustainable practices and pollution prevention activities in all its management actions, including the planning, construction and maintenance of facilities. New and rehabilitated visitor and management facilities in Mojave would be harmonious with park resources, compatible with natural processes, aesthetically pleasing, functional, as accessible as possible to all segments of the population, welcoming to traditionally associated groups, energy-efficient, and cost-effective. In practical terms, the park must also integrate this philosophy into its daily standard operating procedures through adoption of water and energy conservation, recycling and waste reduction practices. Alternative energy sources such as solar electricity would be considered for facilities at remote NPS locations of housing or operations. Park facilities and operations would incorporate sustainable practices and elements to the maximum extent practicable in planning, design, siting, construction, building materials, utility systems, recycling, and waste management.

### **SOLID WASTE DISPOSAL**

Federal law and NPS regulations (36 CFR Part 6) prohibit solid waste disposal, including existing and new landfills, in all units of the national park system. The park would continue to haul solid waste generated by visitors and park operations to an approved site outside the Preserve. Recycling opportunities would be fully explored and implemented wherever feasible. The Baker landfill was closed by state law in 1997. The site was recontoured and fenced (including tortoise proof fencing) and is being monitored by the county. Mojave would work cooperatively with Baker and the county to find locations outside the Preserve to relocate the existing transfer site and sewage lagoons.

### **SAND AND GRAVEL FOR ROAD MAINTENANCE**

Building materials (sand, gravel, and cinders), geothermal resources, and oil and gas on federal lands in the Preserve are not available for extraction or sale. Use of borrow materials for road maintenance must conform to existing NPS policy, which requires materials to be obtained from sources outside the Preserve unless economically infeasible. The Preserve would allow the collection and stockpiling of material that washes onto roads during flood events for emergency use in repairing damage. This collection may occur in the active wash within 100 feet of the road centerline for the maintained paved and dirt roads, but only after a survey of the area certifies that no desert tortoise burrows would be harmed. Material accumulated on the active road surface may be reused or stockpiled without a survey. Stockpiling of such material may only occur at specified locations identified in the cooperative agreement.

### **MILITARY OVERFLIGHTS**

Section 802 of the California Desert Protection Act (CDPA) authorizes continued low-level overflights by military aircraft over new parks and wilderness areas. Mojave is subject to irregular and occasional such use along specified training routes. A small area of the park near Baker is under FAA designated special use airspace, called the “Silver” military operations area (MOA). This special use airspace and

IR (instrument) and VR (visual) routes and are created by the Federal Aviation Administration to warn other civil aviation pilots that high speed (over 250 knots), low level (down to 200 feet above ground level) aircraft may be encountered. The CDPA also emphasizes that nothing in the Act shall preclude the designation of new special use airspace and training routes over parks and wilderness areas. Slower military aircraft, such as helicopters, may be encountered anywhere over the Preserve.

The Desert Managers Group has established an interagency Overflight Working Group comprised of land managers and military staff to identify and attempt to resolve overflight issues. Mojave would monitor military overflights and attempt to document where conflicts with visitor use or resource protection may exist. The park would seek to minimize such conflicts wherever possible, while recognizing the military's mission and authorized use. The park would work closely with the airspace manager and the Overflight Working Group to identify conflicts and implement solutions.

## PLAN IMPLEMENTATION

### STAFFING AND BUDGET

Programs and responsibilities identified under this section of the alternatives would result in the need for additional staff and budget over the existing conditions at the Preserve. Table 4 identifies 15 positions and approximately \$1.6 million that would be required to implement the major elements of this section. Some of the programs have project funds over and above the program coordinator, such as disturbed lands, to allow for restoration activities, or sand and gravel acquisition for road maintenance.

**TABLE 3: ACTIONS COMMON TO ALL ALTERNATIVES COST SUMMARY**

<b>Proposed Activity</b>	<b>New Positions</b>	<b>Total Annual Project Costs</b>	<b>Phase</b>
<b>Carrying Capacity</b> visitor surveys and data gathering on resource indicators	3	\$100,000	II
<b>Fire effects studies</b> (research on removal of grazing, impacts on tortoise, and fire history)	0	\$100,000* for three years	I
<b>Disturbed lands restoration</b> (includes grazed areas, closed roads, and abandoned mine lands)	1	\$200,000	I
<b>Hazardous materials</b> (identification, characterization, remediation and/or removal, management of park wastes)	0	\$250,000	I
<b>Establish lands program</b> (coordinate with willing sellers, convert rights-of-way, review development proposals, manage databases)	2	\$150,000	
<b>Inventorying and monitoring</b> of natural and cultural resources	4	\$200,000	I
<b>Establish basic cultural resource program</b> (compliance, ethnographic studies, and collections management)	3	\$200,000	I
<b>Education and outreach program</b> (develop materials and programs, provide staff, assist schools)	2	\$150,000	I
<b>Sand and gravel</b> for routine road maintenance	0	\$100,000	I
<b>TOTALS</b>	<b>15</b>	<b>\$1,600,000</b>	

*\*projects would be contracted*

Phase I: 1–5 years

Phase II: 6–15 years

# **ALTERNATIVE 1: PROPOSED GENERAL MANAGEMENT PLAN**

## **GENERAL DESCRIPTION**

The vision for the Preserve is the protection and perpetuation of a natural environment and cultural landscape, where protection of self-sustaining native desert ecosystems and processes is ensured for future generations. The preservation and interpretation of historic and archeological resources pertaining to historic land use activities are an important source of visitor education and enjoyment. Educational opportunities and research activities of the natural and cultural environment are encouraged and access for all people, regardless of capability, is assured.

The proposed management plan strives to perpetuate the solitude and quiet, and the sense of discovery and adventure that now exists. The management plan emphasizes minimum overall development that would detract from the setting and sense of discovery that currently exists. This means minimizing new development, including the proliferation of signs, new campgrounds and outdoor interpretive exhibits. This alternative looks to adjacent communities to provide most visitor support services such as food, gas, and lodging.

This alternative also seeks to retain maximum opportunities for roadside vehicle camping, backcountry camping, and access to the Preserve by existing roads consistent with the NPS mission.

This alternative provides for central museum and interpretive facility at Kelso Depot. The National Park Service proposes to seek funding to rehabilitate and partially restore the historic depot for visitor services, including interpretive displays.

This alternative incorporates the NPS mission into the management of the resources within the 1.6 million-acre Preserve, in accordance with the 1994 Congressional designation of the area as a unit of the national park system. Stated simply, this means the primary goal is to protect the resources while providing for visitor enjoyment. However, at Mojave National Preserve, this mission must be balanced with the existence of major utility corridors and with other mandates from Congress, such as grazing, hunting, and mining under NPS regulations. Some changes are proposed for these activities, with the goal of providing for resource preservation and visitor enjoyment.

This alternative envisions that existing landowners may maintain their current way of life, while also establishing an overall goal of purchasing of property from willing sellers where proposed uses conflict with the primary mission of preserving resources.

## MANAGEMENT OF PARK RESOURCES

As a unit of the national park system, Mojave must be managed in accordance with the National Park Service preservation mission as provided in the agencies authorizing legislation (Organic Act of 1916; 16 USC 1), which provides that the primary purpose of park units is:

*“...to conserve the scenery and the natural and historic objects and the wildlife therein, and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations.”*

### **PHYSICAL RESOURCES**

#### **Air Quality/Visibility**

The National Park Service is responsible for protecting air quality under both the 1916 Organic Act and the Clean Air Act (42 USC 7401 et seq.). Although the Clean Air Act gives the highest level of air quality protection to class I areas, it also provides many opportunities for the National Park Service to participate in the development of pollution control programs to preserve, protect, and enhance the air quality of all units of the national park system, including class II areas.

The National Park Service would seek class I designation for the Preserve and would seek to perpetuate the best possible air quality in parks because of its critical importance to visitor enjoyment, human health, scenic vistas, and the preservation of natural systems and cultural resources. The National Park Service would work toward promoting and pursuing measures to safeguard these values from air pollution's adverse effects and would strive to set the best example for others to follow in all the agency's development and management activities. In cases of doubt as to the effects of existing or potential air pollution on park resources, the National Park Service would err on the side of protecting air quality and related values for future generations.

Sections 118 and 176 of the Clean Air Act require federal agencies and facilities to meet all federal, state, and local air pollution control laws and regulations. If units or facilities are located in areas that do not meet federal or state air pollution control standards (nonattainment areas), those units or facilities must conform to requirements established to attain and maintain those standards. The requirements may include provisions to reduce emissions from existing facilities and limit emissions from proposed facilities on a greater than 1:1 basis.

Since Mojave is located in a non-attainment area for one or more air pollutant, no action proposed in any alternative in this plan will lead to violations of federal or state air pollution control laws or regulations, and no-action would increase emissions or violate the state conformity requirements. The Preserve's staff would work with appropriate air pollution control officials to ensure compliance with all requirements.

#### **Viewsheds/Visual Quality**

Mojave National Preserve would prepare guidelines for the built environment to establish visual consistency and themes in facility development. Guidelines would also be created for reaching visual compatibility with surrounding landscapes, significant architectural features, and site details. The primary objective of these guidelines would be to create harmony between the built environment and the natural environment.

With the increasing use of cellular communication equipment, more antennas and relay equipment are being installed throughout the country. The overall management goal of each NPS unit is to protect

and maintain the visual quality of the landscape and the built environment. To help achieve this goal, a communication management plan would be prepared that would address the NPS goals and the need to establish sites for communication equipment. No new permits would be issued until the completion of such a plan. The plan would include the following requirements:

- All above-ground communication equipment must not distract from the visual quality of the scenery.
- Each new proposal for radio or cellular antennas or towers must demonstrate that the equipment would provide a critical service for visitors and NPS staff and is not duplicative.
- The installation of new equipment outside the Preserve or on existing communication towers or at defined sites must be considered before the construction of new sites is considered.
- New locations would be reviewed through the environmental assessment process, which must consider impacts on the visual quality of the scenery.

The National Park Service would work with neighboring landowners on topics of mutual interest being sensitive to the influences and effects that park management might have on adjacent landowners. The National Park Service would seek to enhance beneficial effects and to mitigate adverse effects in ways consistent with its policies and management objectives. The agency would encourage compatible adjacent land uses and seek to mitigate potential adverse effects on park values by actively participating in planning and regulatory processes of neighboring jurisdictions, other federal, state, and local agencies, and Native Americans.

### **Night Sky**

Mojave is a naturally quiet desert environment with very dark night skies that offers visitors and researchers opportunities for natural quiet, solitude and star gazing with few human caused noise or light glare sources. Mojave recognizes that preservation of this resource is critical to the future visitor experience.

The National Park Service would partner with communities and local government agencies to minimize reflected light and artificial light intrusion on the dark night sky, recognizing the essential component that a carpet of stars against a black night sky is for a natural outdoor experience. The National Park Service would strive to set the best example in all developments that involve the use of artificial outdoor lighting, ensuring that such lighting is limited to basic safety requirements and shielded to the maximum extent possible, to keep light on the intended subject and out of the night sky. Baseline light measurements would be established to monitor changes over time.

### **Natural Ambient Sound**

Mojave National Preserve is generally a naturally quiet landscape, with occasional, short-term interruptions of the natural quiet. Depending on the atmospheric conditions, the closeness to a noise source, and topographic features, visitors generally experience very little human-caused noise while in the backcountry. Occasional overflights of commercial jets at cruising altitudes, small private aircraft, and rare military jets at low altitudes may be heard. Vehicle noise is generally not an issue within the Preserve in spite of some major nearby roads (I-15, I-40, and major paved roads). Because of the Preserve's vastness, most areas are well away from traffic and its noise. Other areas where localized noise occurs are at the Razor Open Area, adjacent to the western boundary of the Preserve, the Union Pacific and Santa Fe rail lines, and mining operations. The Union Pacific and Southern Pacific railroad lines are heavily used and the distant rumble of freight trains is faintly audible when one is within a few miles.



The National Park Service would strive to preserve the natural quiet and sounds associated with the physical and biological resources of Mojave. Activities causing excessive or unnecessary sounds in or adjacent to parks, including low-level aircraft overflights, would be monitored, and action would be taken to prevent or minimize unnatural sounds adversely affecting park resources and values or visitor enjoyment. The National Park Service would cooperate with the Department of Defense to minimize impacts on visitors and resources from military overflights. The National Park Service would strive to set the best example in all developments that involve the use of equipment that produces noise.

## **Soils**

Mojave would seek to inventory and preserve its soil resources, and to prevent, to the extent possible, the unnatural erosion, physical removal, or contamination of the soil, or its contamination of other resources. Soil surveys would follow National Cooperative Soil Survey Standards. Products would include soil maps, determinations of the physical and chemical characteristics of soils, and the interpretations needed to guide resource management and development decisions. In particular, areas of existing disturbance and potentially sensitive soils, such as cryptogammic crusts, would be highlighted for possible restoration or protection.

Potential impacts on soil resources would be monitored as necessary. Management action would be taken to prevent or mitigate adverse, potentially irreversible, impacts on soils. Conservation and soil amendment practices may be implemented to reduce impacts. Importation of offsite soil or soil amendments may be used to restore damaged sites. Offsite soil normally would be salvaged soil, not soil removed from pristine sites, unless the use of pristine-site soil can be achieved without causing any overall ecosystem impairment. Prior to using any offsite materials, Mojave would develop a prescription, and select the materials that necessary to restore the physical, chemical, and biological characteristics of original native soils without introducing any exotic species.

When soil excavation is an unavoidable part of an approved facility development project, Mojave would limit the excavation to the minimum amount necessary, and avoid erosion or offsite soil migration during and after the development activity.

## **Water**

Water for the preservation, management, development, and use of the Preserve's water system would be obtained and used in accordance with legal authority and with due consideration for the needs of other water users. Should the National Park Service seek to acquire private land within its boundaries, the essential water rights attached to those lands would also be sought for acquisition. Water would be used efficiently and frugally. The National Park Service would seek to protect, perpetuate, and possibly restore surface water and groundwater as integral components of park aquatic and terrestrial ecosystems. Surface water and groundwater withdrawn for the public use would be the minimum amount necessary to achieve Preserve purposes. All water withdrawn for domestic use would be returned watershed system once it has been treated to ensure that there would be no impairment of Preserve resources. Interbasin transfers would be avoided. The effects to the Preserve's resources from water withdrawn from sources outside of the Preserve (for example, developments at Primm and mining activities at the MolyCorp mine at Mountain Pass) would be monitored. If adverse effects were found, the National Park Service would take all legal and appropriate steps necessary to protect natural resources from the effects attributed to such activities. The park would work with holders of water rights to restore modified waters sources to natural conditions while still allowing for valid uses consistent with the State permit.

Pursuant to Congressional direction in the California Desert Protection Act, Mojave National Preserve would seek to restore, maintain, or enhance the quality of all surface and ground waters within the

Preserve consistent with the Clean Water Act (33 USC et seq.) and other applicable federal, state, and local laws and regulations.

### **Floodplain and Wetland Areas**

The occupancy and modification of floodplain and wetland areas would be avoided wherever possible. Where no practicable alternatives exist, mitigating measures would be implemented to minimize potential harm to life, property, and the natural floodplain and wetland values. Management of floodplain and wetland areas is subject to the provisions of Executive Order 11988, "Floodplain Management" (42 USC 4321), Executive Order 11990, "Protection of Wetlands" (42 USC 4321), and the Rivers and Harbors Act (33 USC 401 et. seq.), and section 404 of the Clean Water Act (33 USC 1344).

### **Water Rights**

The California Desert Protection Act of 1994 in section 706(a), with respect to each wilderness area, reserves a quantity of water sufficient to fulfill the purposes of the act. Section 706(b) mandates that the Secretary of the Interior and all other officers of the United States take "all steps necessary to protect the rights reserved by this section." Federal reserved rights generally arise from the purposes for the reservation of land by the federal government. When the government reserves land for a particular purpose, it also reserves, explicitly or by implication, enough unappropriated water at the time of the reservation as is necessary to accomplish the purposes for which Congress or the president authorized the land to be reserved, without regard to the limitations of state law. The rights vest as of the date of the reservation, whether or not the water is actually put to use, and are superior to the rights of those who commence the use of water after the reservation date. General adjudications are the means by which the federal government claims its reserved water rights. The McCarran Amendment (66 Stat. 560, 43 U.S.C. 666, June 10, 1952) provides the mechanism by which the United States, when properly joined, consents to be a defendant in a suit to adjudicate water rights. The precise nature and extent of the National Park Service's water rights probably will remain uncertain until the United States is joined in an adjudication, the Department of Justice files claims to water rights on behalf of the National Park Service, and the court decrees the United States. Hence, it is the responsibility of both the National Park Service and the Bureau of Land Management to protect the reserved water rights established under the California Desert Protection Act and other applicable federal authorities.

The National Park Service in its general planning process for each unit of the national park system, and the Bureau of Land Management in its planning process for each wilderness area, have jointly agreed to incorporate their respective policies, guidelines, and administrative procedures and apply the following principles to discharge their responsibilities under section 706 of the California Desert Protection Act to manage and protect federal reserved water rights (Desert Managers Group 1995):

- inventory all water sources within the boundaries of the wilderness area/park unit
- identify as a federally reserved water right all unappropriated water from any water source identified on federal lands within the boundaries of designated wilderness and/or park areas in the California desert
- share water source inventory data
- jointly request from the California Division of Water Rights notification of any filing for appropriated water rights within or adjacent to the boundaries of BLM wilderness or units of the national park system
- defend federally reserved water rights through the state of California administrative process and, if necessary, seek judicial remedy in the appropriate courts

- quantify the amount of water reserved to fulfill the purpose of the reservation as part of any adjudication in California in which the United States may be joined under the McCarran Amendment
- where necessary, pursue acquisition of any existing nonfederal appropriated water right within their respective jurisdictions
- because use of percolating groundwater does not require a permit from the state of California, participate in local government proceedings that authorize nonfederal parties to withdraw percolating groundwater where such withdrawals may impact water sources within their respective jurisdictions to which federally reserved water rights are attached
- participate in any proceedings pursuant to Nevada state water law that may authorize withdrawal of groundwater where such withdrawal may impact water sources within their jurisdictions to which federally reserved or appropriated water rights are attached

### **Paleontological Resources**

Paleontological resources, fossils and their associated data, are the physical evidence of past life on the earth and include representatives of all kingdoms of life — Monera, Protista, Fungi, Plantae, and Animalia. Trace fossils (burrows, tracks, etc.) are included. These resources would be managed in accordance with NPS management policies and goals established by the National Park Service Strategic Plan.

Paleontological resources would be inventoried, monitored, protected, and preserved, and where appropriate, made available for scientific research. Collection of specimens would only in limited circumstances. All specimens collected from the park would be appropriately curated and have adequate documentation of the specimen, the locality, the geologic context, and other pertinent data. Where appropriate, the resources would be managed for public education and interpretation in accordance with park management objectives and approved resource management plans. The National Park-Service would identify areas where additional research by the academic community would aid in protection of the resources. The park would also seek to develop collaborative partnerships with other parks, government agencies and public and private organizations with paleontological resource management or research capabilities/expertise.

To protect paleontological resources from harm, theft, or destruction, Mojave would ensure that the nature and specific location of these resources remain confidential. Mojave would take all actions necessary to prevent unauthorized collection and removal of fossils. The sale of scientifically significant original paleontological specimens (which includes *all* vertebrate specimens) is prohibited in parks.

### **Geological Resources**

Mojave would inventory, preserve and protect geologic resources as integral components of the natural systems, including both geologic features and geologic processes. The park would work with partners to assess the impacts of natural processes and human-related events on geologic resources; maintain and restore the integrity of existing geologic resources; integrate geologic resource management into park operations and planning; and interpret geologic resources for park visitors.

As a natural ecosystem, geologic processes would proceed in Mojave unimpeded. Geologic processes are the natural physical and chemical forces that act within natural systems, as well as upon human developments, across a broad spectrum of space and time. Such processes include, but are not limited to, erosion and sedimentation, karst processes, seismic and volcanic activity. Geologic processes would be addressed during planning and other management activities in an effort to reduce hazards that can threaten the safety of park visitors and staff and the long-term viability of park infrastructure.

Mojave would protect geologic features from the adverse effects of human activity, while allowing natural processes to continue. Geologic features include rocks, soils, mineral specimens, cave and karst systems, canyons, sand dunes, dramatic or unusual rock outcrops and formations, and fossilized plants and animals. In Mojave, recognition of valid existing mineral rights may affect our ability to prevent all adverse effects, unless they are deemed significant or funding is available to purchase the valid right.

## **Caves**

Cave resources would be managed in accordance with the NPS Management Policies and specific guidance in NPS Director's Order 77, the Federal Cave Resources Protection Act, and goals established by the Park Service Strategic Plan. In general, the park would manage caves in a manner that protects the natural conditions such as drainage patterns, airflow, and plant and animal communities. Atmospheric, geologic, biological, ecological, and cultural resources would be addressed and managed in accordance with approved cave management plans.

The National Park Service would enhance its own knowledge of the resources present through comprehensive inventory and monitoring programs. It would also identify areas where additional research by the academic community would enhance the protection of the resources. The park would also seek to develop partnerships with academia, government agencies (in particular USGS), geological and paleontological societies, and others to enhance our conservation and management of the resources.

The National Park Service would continue to work cooperatively with the California Department of Parks and Recreation to inventory, study and protect the significant cave resources that are found at Providence Mountains State Recreation Area.

In general, the NPS management direction is to avoid development of caves and to perpetuate natural conditions, while seeking to protect the resource. Potentially harmful developments or uses, including those that allow for general public entry, such as pathways, lighting, and elevator shafts, would not be allowed in, above, or adjacent to caves until it can be demonstrated that these would not significantly affect natural cave conditions, including sub-surface water movements. Developments already in place above caves would be removed if they are significantly altering natural conditions. Where significant cave resources exist, a cave management program should be developed which may include the following elements, depending on the situation:

- interpretive program
- visitor safety
- cave protection guidelines
- cave restoration program
- trail and lighting system maintenance
- cave zoning classification system
- safety and health guidelines
- cave geographic information system
- inventory system and guidelines

## **BIOLOGICAL RESOURCES**

The wildlife and vegetative resources of Mojave National Preserve reflect the mingling of three major North American deserts: the Great Basin, the Mojave, and the Sonoran deserts. Vegetation consists primarily of species common to the Mojave Desert, but the Preserve also contains floral species of the

Great Basin, Sonoran, and even some elements of the California coastal zone. Management emphasis at Mojave would be on minimizing human impacts on native ecosystems and the dynamics of naturally functioning populations. Native ecosystems occur as a result of natural processes that have occurred, are now occurring, or may occur in the future. Any species that have moved onto park lands directly or indirectly as the result of human activities are not considered native.

## **Flora**

Mojave National Preserve is considered a unique floristic area, with many plant species found only within its boundaries. Mojave would seek to perpetuate native plant life (such as vascular plants, ferns, mosses, algae, fungi, and bacteria) as critical components of natural desert ecosystems. Mojave would seek to develop a complete inventory of all floristic components and establish monitoring programs to serve as early warning systems for health of the system.

Plants and plant communities would be manipulated only when necessary to achieve approved management objectives. To the maximum extent possible, plantings would use seeds, cuttings, or transplants representing species and gene pools native to the ecological portion of the park in which the restoration project is occurring. In some isolated cases, plants that are historically appropriate for the period or event commemorated may be used. Use of exotic plant species is restricted to situations that conform to the exotic species policy. Plants and plant communities may be manipulated to maintain habitat for threatened or endangered species, but only native plants may be used if additional plantings are done, and manipulation of existing plants would be carried out in a manner designed to restore or enhance the natural functioning of the plant and animal community of which the endangered species is a natural part.

Use of non-natural plantings [exotic plants] may be permitted under the following conditions:

- In localized, specific areas, screen plantings may be used to protect against the undesirable impacts of adjacent land uses, provided that the plantings do not result in the invasion of exotic species.
- Where necessary to preserve and protect the presentation of significant cultural resources and landscapes, trees and other plants, plant communities, and landscapes will generally be managed to reflect the historic designed landscape or the scene that prevailed during the historic period.
- Where needed in developed areas, plantings would use native or historic species and materials to the maximum extent possible. Certain native species may be fostered for aesthetic, interpretive, or educational purposes.

## **Fauna**

The NPS management goal would be to preserve and protect native wildlife and their natural habitat in a manner that would result in self-sustaining populations of native species. The NPS policy is to maintain all components and processes of naturally evolving park ecosystems, including the natural abundance, diversity and ecological integrity of all native species. The park would not promote actions that would attempt to solely preserve or enhance populations of individual species (except threatened and endangered species). Intervention in natural processes would only be undertaken: (1) when directed by Congress, (2) in emergencies when human life and property are at stake, or (3) to restore native ecosystem functioning that has been disrupted by past or ongoing human activities.

The intermingling of the three desert environments has produced approximately 35 wildlife habitat types. The diverse habitats support about 300 species of wildlife. The literature documents 36 species

of reptiles, 206 species of birds and 47 species of mammals. A few of the most notable species include the gila monster, desert tortoise, Mohave tui chub, Mojave fringe-toed lizard, regal ring-necked snake, and desert striped whipsnake. Significant avian fauna include the prairie falcon, Bendire's thrasher, California thrasher, gray vireo, golden eagle, Lucy's warbler, mourning dove and Gambel's quail. The Preserve has one of the more significant bat faunas of the California desert. There are also populations of rock squirrels in pinyon-juniper woodland, a relict population of dusky-footed woodrats, mule deer, porcupines, mountain lions, and desert bighorn sheep.

Significantly, a large portion of the Preserve is critical desert tortoise habitat. Some of the highest densities of tortoise are found in the Ivanpah Valley in the northeast portion of Mojave. Areas that have been designated as critical habitat for desert tortoise will receive special consideration in considering uses, programs and activities that can be allowed within Mojave.

### **Sensitive Species and Habitats**

The National Park Service would identify, inventory, monitor and promote the conservation of all federally listed or proposed threatened or endangered species and their critical habitats in ways that are consistent with the purposes of the Endangered Species Act (16 U.S.C. 1531 et seq.) (See appendix D). As necessary, the National Park Service would control visitor access to and use of critical habitats and might limit access to especially sensitive areas. Active management programs would be conducted as necessary to perpetuate the natural distribution and abundance of threatened or endangered species and the ecosystems on which they depend.

The National Park Service would also identify, inventory, monitor and promote the conservation of all state and locally listed threatened, endangered, rare, declining, sensitive, or candidate species that are native to and present in the Preserve, as well as their critical habitats. Controlling access to critical habitats or conducting active management programs might be considered that would be similar to activities conducted to perpetuate the natural distribution and abundance of federally listed species. Plant and animal species considered rare or unique to Mojave National Preserve would be identified, their distribution mapped, and programs established to monitor their status. All management actions for protection and perpetuation of special status species would be determined through the Preserve's resource management plan.

The National Park Service would develop collaborative partnerships with federal, state, and local agencies that manage lands adjacent to Mojave National Preserve, and with academic institutions with research capabilities in desert ecology or ecosystem management to help achieve these goals.

### **Desert Tortoise**

The management goal of this alternative is the delisting of the desert tortoise following recovery of the Mojave population. NPS manages for multiple species and protection of habitats for all native species. This alternative is directly linked with the grazing, burro management, hunting, and camping alternatives presented elsewhere in the alternatives section (see those discussions for details).

The desert tortoise was officially listed as a threatened species by the U.S. Fish and Wildlife Service in 1992. A Recovery Plan for the Desert Tortoise was released in June 1994 (USFWS 1994). This plan, prepared by eight scientists, describes six major evolutionary populations for the Mojave population of the desert tortoise. Two of these "recovery units" fall within the NEMO planning area: the Eastern Mojave and Northeastern Mojave. The Recovery Plan established critical habitat areas throughout the tortoise's range and provides a strategy for population recovery and delisting of the desert tortoise. The Recovery Plan recommends the creation of a series of reserves, termed Desert Tortoise Wildlife Management Areas (DWMAs). It is the mission of the National Park Service to protect the desert

tortoise and its habitat regardless of its location or habitat designation throughout the park. The NPS would not need to create a new land use classification (such as DWMAs) for these areas because they already receive the highest possible protection as park and wilderness lands. However, for purposes of tortoise recovery, the entire Mojave National Preserve could be considered a DWMA by USFWS.

The recovery plan provides five criteria for delisting, which are:

1. As determined by a scientifically credible monitoring plan, an upward or stationary trend within a recovery unit for at least 25 years;
2. At least one DWMA with reserve level management of 1,000 square miles or more, except under unusual circumstances;
3. A population lambda (discrete growth rate) of at least 1.0 in each DWMA;
4. Regulatory mechanisms and land management commitments are adequate and in place to ensure long-term habitat protection; and
5. The population is likely to remain stable or increase in the future.

As part of this desert tortoise recovery proposal, the NPS recommends that the U.S. Fish and Wildlife Service modify existing critical habitat boundaries to coincide with the category I desert tortoise habitat as mapped by tortoise biologists. The lands in Mojave above 4,000 feet on Cima Dome were not classified by BLM biologists as category I desert tortoise habitat. We believe that considering them as part of the critical habitat acreage for recovery purposes is misleading since it is marginal tortoise habitat. Any tortoises in this area would still be fully protected because of the wilderness designation and other protective measures the park proposes to put in effect.

There are two areas of designated critical habitat in the Preserve (figure 2). The northern area includes Ivanpah Valley, south of Nipton Road, including the areas north, west and south of Cima Dome below 4,000 feet, extending up to Interstate 15. This area totals approximately 492,360 acres (769 square miles) and is within the Eastern Mojave Recovery Unit. Based on discussions with BLM, USFWS and USGS scientists, the NPS recommends that the Ivanpah Valley portion of this habitat (now drawn to be in the Northeastern Mojave Recovery Unit) be considered as part of the Eastern Mojave Recovery Unit for purposes of the Recovery Plan initiatives. This area does not connect to any other conservation area for the tortoise in Nevada where the remainder of the Northeastern Mojave Recovery Unit exists. It is also too small to be considered a suitable recovery unit by itself and it is directly linked to the remainder of the critical habitat to the west.

The second area of the park that contains desert tortoise category one habitat is the Fenner/Clipper Valley. This area contains 280,103 acres (438 square miles) of federal land. This habitat is also within the Eastern Mojave Recovery Unit. Private, state and local agency lands were not considered in this effort and are not considered part of the recovery effort unless the land is subsequently acquired by the adjacent managing agency.

The BLM in California is concurrently considering desert tortoise conservation measures for critical habitat areas that are contiguous to these areas. Their plan should be circulated for review at about the same time as this plan. BLM in Nevada has already designated 328,960 acres (514 square miles) south of Searchlight for desert tortoise recovery (BLM 1998). The USFWS would consider all these areas as contributing to the desert tortoise recovery for these specific population groups.

In order to ensure the long-term protection of the desert tortoise in the park, Mojave would implement or continue the following measures to protect the desert tortoise:

Management policies already in effect:

- Vehicles are permitted only on existing roads. All vehicles must be street legal and licensed. No offroad or wash driving is allowed anywhere in the Preserve.
- No competitive motorized events are permitted. Organized events that don't involve timed races might be acceptable on existing roads, outside desert tortoise active periods, with appropriate restrictions and subject to other NPS statutes and regulations.
- No existing or new landfills are allowed anywhere in park units under NPS regulations. The National Park Service is currently closing and cleaning up old, informal trash dumps. The National Park Service enforces regulations prohibiting dumping and littering.
- The National Park Service aggressively manages trash and litter to avoid subsidizing ravens. Raven proof trash containers are being installed throughout Mojave.
- No agricultural clearing or commercial vegetation harvest is permitted on park lands.
- No surface disturbance is permitted on park lands, unless it is balanced with appropriate restoration or acquisition of replacement lands for mitigation.
- The National Park Service imposes strict limits on research in the desert tortoise critical habitat that might adversely affect the desert tortoise.
- The National Park Service has removed over 2,354 burros from the Preserve since 1997. A management goal of zero feral burros would remain in effect and removals would continue until the goal is reached.
- Mojave enforces NPS regulations (36 CFR 2.4(a)(2)(ii)) prohibiting plinking (random target shooting).
- NPS regulations require dogs to be on a leash (or under physical or voice control of owner for ensuring that their pets do not harass wildlife if used for hunting).
- No collecting of any natural or cultural resources, including desert tortoise, is permitted under NPS regulations, unless done under a research collection permit.
- In order to prevent the spread of disease from captive tortoises, the National Park Service prohibits the release of captive desert tortoises in accordance with 36 CFR 2.1. The park would work with other federal and state agencies to develop a cooperative program where residents can drop off unwanted and injured desert tortoises, and can adopt healthy, previously captive desert tortoises.

Proposed additional NPS management actions:

- In high desert tortoise use areas, during the active season, the park would undertake additional temporary signing and staffing of heavily used entrances on busy weekends to raise visitor awareness of tortoise presence. If necessary, speed limits may be temporarily adjusted.
- The National Park Service would support and participate in an interagency regional study of raven predation in order to determine the appropriate management actions.
- No new roads would be built in the desert tortoise category I habitat. Duplicate roads and those that provide access to range developments, active mines or other development sites would be closed and restored when no longer needed for that function.
- The National Park Service would implement temporary closure of certain dirt roads, as needed, within the desert tortoise category I habitat to reduce vehicle access where human-caused tortoise mortality or stress is identified.
- The park would strive to eliminate unnecessary rights-of-way (ROWs) and easements and would require minimum maintenance in order to prevent increased vehicle traffic. Holders of ROWs and easements may be required to install desert tortoise barrier fencing through the desert tortoise category I habitat if traffic levels suggest a problem and fencing is identified as enhancing protection of the tortoise. Maintenance activities on rights-of-way would be allowed only after the holder



conducts an adequate survey of tortoise burrows along the route and complies with all stipulations from the USFWS biological opinion on this plan.

- The park would establish an active restoration program for disturbed areas after appropriate site-specific historical review and compliance.
- The National Park Service would make lands within the desert tortoise category I habitat a high priority for acquisition.
- The National Park Service would develop extensive educational materials on the life history, threats and recovery efforts of the desert tortoise for use in schools, museums, clubs, published media, site bulletins, and displays in the park information and visitor centers.
- The National Park Service would adopt minimum-impact fire suppression techniques in the desert tortoise-category I habitat, followed immediately by restoration of disturbed areas.
- The National Park Service would encourage and support research on the impacts of fire on the desert tortoise.
- The park would inventory and eliminate hazards to the desert tortoise from abandoned mining activities or facilities (e.g., install devices to exclude the tortoise from mine shafts).
- The park would modify existing water developments (mostly small game guzzlers) to prevent desert tortoise from gaining access and to ensure they are able to escape from them.

Recommended Cooperative Interagency Management Actions:

- The National Park Service would support the proposed cooperative interagency desert tortoise population monitoring effort using protocols and methods adopted by the interagency Desert Managers Group. A coordinator is being hired by the U.S. Fish and Wildlife Service to oversee this effort and Mojave has hired a wildlife biologist to coordinate our monitoring and research. Mojave is slated to receive a park base funding increase in FY 2001 for tortoise inventory, monitoring, protection and education. The park would inventory and monitor desert tortoise populations throughout the Preserve in coordination with the interagency, rangewide efforts.
- The National Park Service would work with the California Department of Fish and Game to limit hunting in Mojave to big game, small game and upland game bird species during their normal state seasons (except small game would only be allowed from September through February). This action, combined with the existing policy on no target shooting, would eliminate the discharge of firearms during the active tortoise period in the spring.
- The National Park Service would work with the county to find a suitable location outside the Preserve to relocate the Baker landfill transfer station. The National Park Service would also encourage and provide support for the relocation of the open sewage lagoons so as to eliminate odors at the Preserve entrance and to reduce raven subsidizing.
- The National Park Service recommends that Caltrans, and communities of Baker, Nipton and Ludlow, and the County of San Bernardino, adopt and enforce appropriate steps to eliminate raven access to trash and food subsidies in areas within their immediate control. The National Park Service also recommends that these entities work with the National Park Service to develop and install public education materials on desert tortoise life history and threats at all rest stops along Interstates 15 and 40, and at other heavily used public use areas throughout the desert.
- The National Park Service recommends that the U.S. Fish and Wildlife Service develop and implement a coordinated interagency program of raven control and reduction in areas where raven predation on juvenile tortoises exceeds natural levels. The raven is protected under federal law as a migratory bird and USFWS is the agency responsible for their management. Also, management of raven populations must be undertaken on a broad scale across many jurisdictions.
- The National Park Service recommends that the California Department of Transportation fund and install desert tortoise barrier fencing material on their existing fences along 25 miles of Interstate 15 and 39 miles of Interstate 40 that bisect desert tortoise category I critical habitat. These major

highways are already significant habitat intrusions and receive substantial amounts of traffic. They also have numerous existing culverts to provide occasional tortoise passage.

- Mojave does not support the concept of installing new desert tortoise barrier fencing on paved roads in the Preserve. Mojave has already undertaken measures (entrance signs and information kiosks) to increase awareness of travelers of potential tortoise and other wildlife encounters. Fencing would lead to further habitat fragmentation and would conflict with our goal of eliminating fencing in the Preserve as grazing permits are retired. Other measures have been identified above that would be implemented seasonally to heighten awareness and slow traffic. This approach is similar to that adopted in Joshua Tree National Park.
- Mojave would work with the U.S. Fish and Wildlife Service, the U.S. Geological Survey, the California Department of Fish and Game, and the San Bernardino County to develop road maintenance standards that minimize impacts on desert tortoise. Berms and roadside vegetation are two issues that need standards to be developed.

If a development project is proposed on federal land within the desert tortoise category I habitat (e.g. a right-of way, mining, range development) and would disturb or otherwise modify the native plant community or ground surface, the developer would be required to purchase equivalent habitat for the desert tortoise's preservation in accordance with the compensation formula established by the Desert Tortoise Management Oversight Group. Similar requirements are enforced by U.S. Fish and Wildlife Service (USFWS) on private lands. Some activities might be required to provide for tortoise monitoring during the project. The National Park Service would apply stipulations identified in appendix E, as appropriate, for all activities permitted in areas where potential encounters with desert tortoise may occur. Mojave would continually evaluate ongoing research and consult with USFWS to modify these stipulations to reflect current research recommendations.

### **Mohave Tui Chub**

A population of the endangered Mohave tui chub (*Gila bicolor mohavensis*) is maintained in small artificial ponds at Soda Springs. A final recovery plan exists for this species. The Mohave tui chub was listed as an endangered species in 1970 by the U.S. Fish and Wildlife Service. The Mohave tui chub is the only fish native to the Mojave River basin in California. The arroyo chub (*Gila orcutti*) was introduced into the Mojave River system in the 1930s. This exotic chub successfully hybridized with the Mohave tui chub, and by 1970 the latter fish species was believed to have been eliminated by this process of introgression. A small population of (believed) genetically pure Mohave tui chub was found at a small pond (6 feet deep and 9 feet in diameter) at Soda Springs on the western bank of the dry Soda Lake (FWS 1984). A genetic study, completed in September 1997, found that the Mohave tui chub is a distinct subspecies (May et al. 1997). Since its rediscovery, populations have been successfully introduced to constructed ponds at Soda Lake, Camp Cady, and China Lake Naval Weapons Center. The total estimated population at these four areas is between 10,000 and 20,000 fish (Mohave tui chub recovery team meeting, November 1996).

Mojave would develop a cooperative agreement between the National Park Service, California Department of Fish and Game (CDF&G), U.S. Fish and Wildlife Service and California State University to identify management objectives and strategies, consistent with the recovery plan, for maintaining the Mohave tui chub population (such as cattail and other aquatic plant removal and dredging of the pond). Mojave would also pursue funding to provide for continued maintenance of the ponds and monitoring of the population.

### **Desert Bighorn Sheep**

Native populations of Nelson's bighorn sheep (*Ovis canadensis nelsonii*) are found in most of the mountainous terrain of the park, with population estimates as of 1994 at between 400 and 675 or more animals (Torres, S. G. et al. 1994). The population is listed as "fully protected" by the state, primarily due to the fragmentation of habitat throughout its range. Mojave National Preserve provides substantial protected habitat for desert bighorn, and is also one of the few places in California where bighorn sheep hunting is allowed. Limited hunting of bighorn sheep began in 1987 (BLM 1988). A limited number of permits to hunt bighorn sheep are issued each year by the CDF&G through a lottery system.

The park management goal would be to inventory, monitor, and protect a self-sustaining population of bighorn, while allowing some hunting as mandated by Congress. Research would be encouraged and supported to address the following management issues:

- To determine the need for artificial water guzzlers and predator control.
- To determine the impact of rock climbing on Clark Mountain, especially during lambing.
- To determine potential effects of jet noise from the threatened development of a major regional airport only miles from the park's northern boundary.

### **Sensitive Habitats**

Mojave would inventory, map and monitor sensitive, unusual and limited distribution habitats. The National Park Service would also encourage and support research to assist in determining threats and appropriate management strategies. The park would encourage and support visitor use and education efforts in order to promote understanding of them.

### **Coastal Sage**

Several canyons, located within the New York Mountains, contains a unique assemblage of plants and an interesting blending of plant communities not found elsewhere within the Preserve. Besides the small stand white fir trees (see section below), an "enriched" pinyon-juniper-oak woodland, or interior chaparral community, is found in Caruthers, Keystone, and Live Oak canyons. Manzanita (*Arcostaphylos* spp.) oaks (*Quercus* spp.), silktassel (*Garrya* spp.), single-leaved ash (*Fraxinus anomala*) western service-berry (*Amelanchier utahensis*), holly-leaved redberry (*Rhamnus ilicifolia*), yerba santa (*Eriodictyon augustifolia*), and desert olive (*Forestiera neomexicana*) all species usually found in coastal associations, are documented in these canyons. Coastal sage is typically a fire tolerant community, supporting intense fire due to volatile compounds in the plants, but recovering over time to a similar community. Calicolous scrub, a community that grows only highly calcic soils, is also found within the New York Mountains.

### **White Fir Populations**

Small populations of Rocky Mountain white fir (*Abies concolor concolor*), relict populations from the late Pleistocene-early Holocene period can be found in the upper reaches of the New York and Clark mountains. These pockets of white fir trees probably exist due to favorable conditions at the microsite level, with humidities in these small areas sufficient to favor sufficiently low evapotranspiration rates (Latting and Rowlands 1995). These north-facing canyons are moister and cooler than the surrounding desert and shelter these relict stands.

Fire planning would address efforts to protect white fir stands from wildfire, since they are not tolerant to extremes in heat and have a thin outer bark. Its seedlings need shade to germinate and establish, so if a stand were destroyed by fire, conditions for new tree growth would not be favorable.

### **Joshua Tree Woodlands**

The most obvious feature of Cima Dome, next to its unique geological form, is the abundance and size of Joshua trees (*Yucca brevifolia jaegeriana*). Mojave's Joshua tree woodland, covering Cima Dome and surrounding areas, is considered to be the largest and most dense stand within the tree's range, covering in excess of 150 square miles and probably containing more than a million trees. Although methods of aging of the trees are still subject to some disagreement, some of the trees with base diameters in excess of three feet and heights of 30 feet or more, may be 500–1,000 years old. The Joshua tree forest has not been surveyed and mapped for age distribution, nor are there any quantitative data to indicate the status of new seedling recruitment into the population. Joshua trees are susceptible to wildfire, and above-ground portions of the plants are often killed.

Park management goals would include:

- Inventory and monitor the extent, density, and age distribution of the Joshua tree woodland.
- Research the long-term effects of grazing and, possibly, how the removal of cattle would effect population dynamics of the Yucca species.
- Investigate fire management strategies that consider short and long-term fire effects on components of this community and determine appropriate strategies.

### **Other Unusual Plant Communities**

Other plant communities have also been identified as “unusual,” meaning they may be particularly sensitive to disturbance, or are limited in distribution, and should be inventoried, monitored and studied to determine appropriate management actions. These include:

**Calicolous Scrub:** Vegetation associated with limestone and dolomitic outcrops occurring in the Providence, New York, and Clark Mountains. Characterized by the occurrence of many uncommon plants.

**Sagebrush Scrub:** Great Basin sagebrush (*Artemisia tridentata tridentata*) occurs in the Round and Gold Valleys in the Mid Hills area. This community is typical of the Great Basin desert to the north and is one example of the intersection of the three great southwestern deserts.

**Shadscale Scrub:** A stand of shadscale (*Atriplex confertifolia*) occurs at Valley Wells and is characteristic of alkaline soils of the Great Basin Desert.

**Desert Grassland:** A large expanse of desert grassland containing about 20 species of perennial grasses is found in eastern Lanfair Valley.

**Kelso Dunes:** The Kelso Dunes supports vegetation highly adapted to life in the sand, including a number of perennial grasses.

**Mojave Yucca:** The slopes of the Hackberry, Woods, and Providence Mountains support stands of very tall (up to 25 feet) Mojave yucca (*Yucca schidigera*).

**Succulents (Cactus gardens):** Many mountain slopes support extensive stands of cactus, including barrel, silver and buckhorn cholla, hedgehog, Mojave mound, beavertail, and prickly pear.

**Riparian:** Piute Creek, the Preserve's only perennial stream, and the ephemeral Bull Canyon's stream in the Granite Mountains, support lush stands of cottonwoods, willows, and other riparian vegetation. Seeps and springs are relatively scarce and sometimes support riparian species. Studies have shown riparian areas, including large washes, to be extremely important for ecosystem biodiversity and sustainability.

**Mesquite:** Mesquite thickets, which indicate a high water table, occur in substantial numbers near Crucero, south of Soda Lake. Illegal offroad vehicle usage from the adjacent BLM Rasor OHV area poses threats to this community.

**Smoke Tree:** The smoketree (*Dalea spinosa*) is a species reaching its northern distribution in or near the Preserve. This Sonoran desert plant occurs in washes primarily along Interstate 40, although it is also found in the Mojave River drainage west of the Preserve. A large assemblage of smoketree in Piute Valley was recognized by BLM as a Sensitive Unusual Plant Assemblage.

### Introduced Species

Nonnative plants and animals would not be used/introduced, except at historic sites where treatment plans (using the "Secretary of the Interior's Standards for Historic Properties") have been approved by the superintendent. The management of populations of exotic plant and animal species, up to and including eradication, would be undertaken in accordance with NPS Management Policies wherever such invasive species threaten park resources or public health and when control was prudent and feasible.

### Burros

Feral burros are an invasive, nonnative species that damage native habitat and compete with desert bighorn, desert tortoise and other native species for limited forage. The proposed management goal at Mojave is to remove all burros from inside the boundary and implement actions, to the extent practicable, to ensure that they do not reenter. Before initiating this proposed burro removal program, Mojave would continue to manage the current burro population as described in the existing management alternative. The Bureau of Land Management's former prescribed herd management level is 130 animals. A cooperative agreement between the National Park Service and the Bureau of Land Management calls for burros to be managed at that level until adoption of this proposal. Because the existing population far exceeds this interim target level, Mojave initiated removals in 1997 to reduce the population to 130 animals. The existing management alternative provides details about the current burro removal and adoption techniques at Mojave.

Thirty days after the signing of this document's record of decision, the National Park Service would begin implementing this proposed action for the removal of the remainder of Mojave's burros. Burros would be removed in a multi-phased approach similar to that used successfully in Death Valley National Monument (NPS, 1982) as described below.

**Phase One.** During phase one, up to two years would be allowed for the live capture and removal of as many burros as possible. The methods and procedures for capture, transport, and placement are the same as those used in the existing management program. They are summarized below and presented in detail in the *Action Plan for the Removal of Feral Burros* (NPS, 1998). The capture techniques would include water trapping, horseback wrangling, helicopter-assisted roping and trapping, and net gunning. The captured burros would be placed through the BLM adoption program, animal protection groups, or direct or indirect placement programs of the National Park Service.

Four **capture methods** would be used or considered for Mojave's burro program: 1) water trapping, 2) horseback wrangling, 3) helicopter-assisted roping and trapping, and 4) net gunning. A phased approach would be employed in implementing these methods. Water trapping is considered the easiest and least expensive means of capture, with horseback wrangling and helicopter methods becoming increasingly more difficult and expensive. The more difficult capture methods, however, are also more effective at capturing elusive, remote, and solitary animals. It is anticipated that as water trapping becomes less effective, horseback wrangling and helicopter methods will become the primary focus of capture operations.

The four capture methods are described in detail below. The number of burros that are removed with each method is subject to modification as the program progresses and various capture methods prove more or less effective than anticipated.

- 1) **Water Trapping.** Burros are habituated to drinking at certain cattle corrals and developed waters in the desert. During water trapping, the animals enter a corral through a one-way gate known as a "finger trap" or "trigger" to obtain water, and cannot exit. Only existing corrals or previously developed water sources are used. Temporary corrals would be set up around those developed water sources planned for trapping where no corral exists. Temporary corrals are made of 6-rail livestock panels. No trapping is or would be conducted at springs, wetlands, riparian areas, or other sensitive environments. All trapping locations are previously heavily impacted by livestock and feral burro use.

Traps are checked for animals every day during water trapping operations. Trapped animals are loaded on a trailer and hauled to a central holding corral, where they await shipment out of Mojave. Holding corrals, like the trapping corrals, are located on ground that is previously heavily disturbed by livestock use. Only existing corrals are used. Burros wait in the holding corral no more than five days before shipment out of the park. Whether in the trap or in the holding corral, burros are given constant access to water and are provided adequate feed.

Water trapping has been highly successful at Mojave, resulting in the capture of 1,841 burros during three separate trapping seasons. Experience in other locations suggests that water trapping is most effective in the summer, when the animals are more thirsty and more willing to enter a trap to get a drink, and when there are fewer natural water sources available. Based on the effectiveness of the water trapping program to date, however, Mojave is attempting to water trap burros on a year-round basis. If water trapping becomes ineffective in the spring, fall, or winter, trapping during these seasons would be halted. Additionally, it is anticipated that as the program progresses, even warm-season water trapping will become less successful, because the burro herd will be reduced to only those animals that drink at natural sources.

- 2) **Horseback Wrangling.** As burro numbers are reduced, water trapping will become less effective. One alternative is horseback wrangling, where riders capture burros by driving them into corrals or by roping the animals and leading them into corrals. Efforts would be made to use existing corrals or set up temporary corrals (using six-rail livestock panels) in previously disturbed areas. Like water trapping, burros would be moved to a central holding corral where they await removal from the park. They would be held no more than five days, would have free access to water, and would receive regular food.

It is anticipated that horseback wrangling would be used throughout the life of the program to capture animals that cannot be water trapped and are not concentrated enough to warrant the expense of helicopter capture. Costs per animal capture are expected to increase over the life of the program as burros become harder to reach due to terrain factors and distance from roads.

- 3) **Helicopter-Assisted Roping and Trapping.** During helicopter-assisted trapping, a helicopter is used to locate burros and herd them into a funnel trap. Wranglers wait until the burros enter the mouth of the funnel trap and then close in behind the animals, herding them into the corral. During helicopter-assisted roping, a helicopter is used to herd the animals to a capture site where wranglers are waiting. The wranglers rope the animals and lead them to a corral. Like the other two methods, captured burros would be placed in a temporary holding corral where they would be cared for while awaiting removal from Mojave.

Helicopter-assisted roping and trapping would be employed to capture burros in those areas where water trapping and horseback wrangling are not feasible or effective, and where there is a high enough concentration of burros that helicopter methods would prove cost effective. Costs per animal capture are expected to increase over the life of the program as burro numbers are reduced. In FY2000, Mojave initiated helicopter assisted roundups in the Lava Beds and Granite Mountains, resulting in the capture of over 513 burros by this technique.

- 4) **Net Gunning.** During net gunning, a net is fired onto the animal from an overhead helicopter. Animal handlers (either already on the ground or in the helicopter) then move the burro to a designated holding corral. Captured animals would be placed in a temporary holding corral where they are cared for while awaiting removal from Mojave. It is anticipated that only the most remote and elusive burros would be captured through net gunning. Net gunning would be used sparingly and only in those situations where no other option exists for burro capture. Costs per animal are expected to be extremely high.

Mojave currently utilizes three **placement sources** for captured burros. The market for burros in the United States is limited, and no single placement source is capable of absorbing all the burros that must be removed. Cost also factors into decisions on placement. The three placement sources are:

- 1) **The Fund for Animals' Black Beauty Ranch.** The Black Beauty Ranch, located in East Texas and owned by the late Cleveland Amory's Fund for Animals, is a haven for unwanted animals. In a signed general agreement with the NPS, the Fund has agreed to accept up to 300 Mojave burros per year at the Black Beauty Ranch. Under the terms of the agreement, the Fund takes the animals free of charge. The NPS must finance shipping of the animals to Texas, plus all necessary veterinarian check-ups and blood work. Mojave contracts for shipping and veterinarian services.

Upon arrival at the Black Beauty Ranch, the burros become the property of the Fund for Animals, and they are adopted to interested parties or live out their lives on the ranch. In 1998, 100 burros were successfully sent to the Black Beauty Ranch under this agreement. In 1999, 300 animals were placed there.

- 2) **Private Contractor.** In 1998, Mojave contracted with a private company to remove and market burros for NPS. The company picked up the burros from the park, transported the animals to their facilities, and sold them to private entities. Their market included selling burros for pets, breeding, pack stock, and other recreational purposes. Under contract stipulations, no burros were sold for slaughter, and the company made available to the NPS records indicating where each burro was sold. The program with this company has been highly successful, resulting in the placement of hundreds of burros. Mojave would continue to use this contract to place burros in the future.
- 3) **Bureau of Land Management Wild Horse and Burro Adoption Program.** The BLM has a well-established adoption program for horses and burros removed from the wild. During 1997, Mojave placed 600 burros through the BLM program. Another 100 animals were placed with

BLM in 1999. Due to a saturated market, fiscal considerations, and BLM's interpretation of the 1971 Wild and Free-Roaming Horse and Burro Act, BLM's ability to take burros from Mojave is limited, but this option will be used in the future where appropriate.

Burro herd migrations, size of the park, and uncertainties associated with the effectiveness of the various capture methods make predictions on the timing of burro capture very difficult. Generally, horseback wrangling and helicopter-assisted capture would be conducted during the warmer months when burro herds are concentrated around water sources. Water trapping, which is assumed to be more effective in the summer, would nevertheless be attempted year-round to test the efficacy of a four-season operation.

Predictions about **capture locations** are also difficult to make. Mojave is a large area with few geographic boundaries that can inhibit burro migration within the park. The 1996 survey (NPS, 1997) and burro monitoring over the last three years by park staff, suggest that burro herds are concentrated in the following general locations: Granite Mountains, Providence Mountains/Clipper Valley, Woods/Hackberry Mountains, New York Mountains, Ivanpah Mountains, Cima Dome, Cinder Cones, and Clark Mountain. The combined area of these locations totals over one million acres. Predicting burro herd locations within these general geographic areas is problematic. Decisions on general capture areas would be based on monitoring observations taken approximately two weeks prior to capture operations.

Decisions regarding specific trap and holding corral locations would be made immediately after the determination of the general capture locations. The specific number of livestock corrals in Mojave that could serve as potential traps or holding facilities is unknown, but may number in the hundreds. Potential holding facilities exist within a few miles of almost all capture locations.

**Phase Two.** Upon signing of the Record of Decision, the National Park Service would provide a maximum of six months during which animal protection groups may remove any remaining animals, at their expense, from areas of the Preserve where live trapping/capture techniques have achieved the maximum cost effective results. If the group's proposal is agreeable with the NPS, an agreement would be negotiated and signed between the National Park Service and the interested group(s). The National Park Service would provide oversight, logistics support, and the use of some equipment and corrals.

It is anticipated that most of the Mojave's burros would likely be captured and removed through phases one and two. If an agreement with an animal protection group is not reached within six months of the signing of the Record of Decision, NPS would immediately begin Phase three. Phases one and two must result in adequate removals each year to reduce the populations substantially in the area being targeted. If phase one proves unsuccessful in the first year, the NPS would move to phases two and three as needed to achieve the desired results. One area of the Preserve may remain in phase one, while other areas proceed to phases two and three as necessary.

**Phase Three.** In phase three, NPS staff or contractors would eliminate the remaining few animals in a humane manner to achieve a zero population. This action would occur only when desert tortoises are not active above ground. By timing operations in this manner, juvenile tortoises would not be subject to increased predation by ravens, which are likely to congregate near burro carcasses. Phase three would continue for an indefinite time. The park also maintains the option of implementing phase three if live captures do not succeed in reducing populations. As captures proceed, a particular area of the park could be placed in phase two or three separate from the rest of the park.



The NPS is aware of the burro's potential for rapid population growth (up to 25% per year). The above proposed removal strategy would result in a burro population that approaches zero within five years of its initiation in 1997.

A BLM burro Herd Management Area (HMA) lies adjacent to Clark Mountain, with no natural or constructed barriers to prevent burros from entering this satellite unit of the Preserve. No other BLM HMAs exist immediately adjacent to Mojave. The National Park Service would work with the Bureau of Land Management to minimize trespass animals from their HMA. To most effectively manage these animals and prevent or reduce their impacts, Mojave would:

- Work cooperatively with BLM and CDF&G on conducting joint gathers and aerial surveys.
- Fence sensitive resources, especially springs and seeps, to prevent burro access. The fence design would be similar to that proposed by Andrew, Lesicka, and Bleich (1997), which allows deer and bighorn sheep to pass, but not burros or cattle. This option could not occur until the grazing permit is retired.
- Work cooperatively with BLM and CDF&G to provide water sources for burros outside the Clark Mountain boundaries of the Preserve. This would encourage the animals to congregate on lands managed by BLM (whose mandate it is to manage burros), as opposed to NPS lands on Clark Mountain.

### **Tamarisk**

Mojave would continue to identify and remove the invasive nonnative salt cedar tamarisk (*Tamarisk ramosissima*). Successful control of tamarisk has been demonstrated in numerous projects throughout the southwest. Only authorized herbicides would be used in tamarisk control efforts. Such herbicides are non-persistent, non-toxic to aquatic life and are used in accordance with accepted management practices and proper dosages. Any use of poisons or other chemical agents on federal lands within the Preserve, including use by the park or by permittees, requires review and permission under the NPS Integrated Pest Management program.

Athel tamarisk trees (*Tamarisk aphylla*), such as those planted along the Union Pacific railroad corridor for protection of the tracks from blowing sand, do not spread easily and are not considered a threat. Retention of athel tamarisk trees at Kelso Depot and Zzyzx as part of the historic landscape would be evaluated during planning efforts for those sites.

### **Mule Deer**

The California Department of Fish and Game introduced the Rocky Mountain mule deer (*Odocoileus hemionus hemionus*) into the New York and Providence Mountains in 1948 from Arizona (Dasmann 1968). Nine bucks and 31 does were released. The first authorized hunt of this population was in 1955. The department estimates that about 25 deer are taken per year. The population has remained relatively stable since the first introduction.

Mule deer are native to the Mojave Desert and occur in nearby mountain ranges. Although the deer in Mojave were introduced by the California Department of Fish and Game, anecdotal information suggests that a resident population may have occurred in the pinyon-juniper and sagebrush habitat prior to these introductions. It is likely that these deer have interacted and bred with adjacent herds over the last 50 years and may now be genetically similar. DNA studies would help to resolve this apparent information discrepancy. No actions to remove this species are warranted until this issue is resolved.

### **Chukar**

The chukar (*Alectoris graeca*), an upland game bird popular among hunters, was first introduced into California (from India) in 1932 (Mallette c.1970). Between 1932 and 1955, more than 52,000 birds were released by the California Department of Fish and Game (Mallette c.1970). The birds prefer rocky open hills and flats. Sightings have been reported from below sea level to above 12,000 feet in the White Mountains and Sierra Nevada. The animal is abundant in parts of the Preserve.

In order to protect the native quail population and to maintain a native desert ecosystem, the NPS would encourage reductions in this population of exotic birds by seeking a higher bag limit, as compared to the native quail population. No new releases of these, or other exotic species, would be authorized.

### **CULTURAL RESOURCES**

Many of the agency responsibilities and mandates for cultural resources are addressed in the section, "Actions Common to All Alternatives."

#### **Program Goals**

The National Park Service would develop and implement a systematic, integrated cultural resource management program in accordance with the NPS *Management Policies* (1988) and *Director's Order* 28. This program would identify, inventory, monitor, and evaluate archeological sites, historic properties, cultural landscapes, and ethnographic resources; nominating significant resources to the National Register of Historic Places and would manage, protect, and preserve such listed properties in a way that would preserve their documented archeological, architectural, ethnographic, historic, or research values. The program would be developed through collaborative partnerships with government agencies and public and private organizations with cultural resource management expertise.

Mojave's resource management plan would address the requirements, projects, and funding to implement the cultural resource program. To support this program, the National Park Service would develop collaborative partnerships with government agencies, as well as public and private organizations with expertise in cultural resource management or research capabilities. These entities could include federal, state, and county agencies, academic institutions, local and regional cultural and historical associations, and Native American tribes affiliated with lands in the Preserve. As requested, the National Park Service would cooperate with owners of historic properties within the national Preserve boundaries to ensure their preservation. To achieve cultural resource program objectives, under the authority of 36 CFR 1.5, the National Park Service might control or limit human activities in areas designated as culturally sensitive or threatened.

#### **Archeology**

The development phase of the ASMIS program would continue with completion anticipated in 2001. Updates to the database would be undertaken as new information becomes available. Except as necessary for projects with proposed land disturbance, little new archeologically-based research is anticipated in the foreseeable future.

## **FACILITIES AND DEVELOPMENT**

The management goal is to minimize development of new facilities that would detract from the setting and sense of discovery that currently exists. This means minimizing new development, including the proliferation of signs, new campgrounds and outdoor interpretive exhibits. Mojave would look to adjacent communities to provide most visitor support services such as food, gas, and lodging.

The National Park Service intends to locate some management facilities outside the Preserve, consistent with the existing management direction and proposed actions identified in this plan. This would include, but is not limited to, the headquarters site in Barstow, visitor information facilities in Baker and Needles, and potentially employee housing in Baker, Needles, Nipton, or Essex. Buildings may be acquired through donation or acquisition. An assessment would be made for possible future uses such as visitor contact stations, administrative facilities, employee housing or restoration as historical interpretive properties.

### **VISITOR INFORMATION**

#### **Information Centers and Sources**

A small information and visitor contact desk would be staffed at the headquarters building in Barstow to serve the public and fill the needs of local communities. Staffed information centers at Baker and Needles would continue to operate with the same focus as at present for the near future, although the exact location is subject to change since the facilities are leased. Mojave would continue to pursue partnerships with other agencies (federal, state and local), tribes and private organizations to offer a broad range of visitor information at key desert gateway locations that target a variety of users.

Because the Preserve has many highway entrances and only two staffed information centers outside its boundary, many visitors might arrive without much opportunity to receive advanced information. To remedy this situation, the staff would continually investigate and develop effective means of providing advanced information on the Preserve and the Mojave Desert. The overall objective of this proposal would be to try to provide advance information that would improve the quality of people's visit to the Preserve.

The Hole-in-the-Wall information center would continue to provide visitor information and serve seasonally as a base for interpretive programs such as ranger-led walks and talks. Eventual replacement of the existing information center is being evaluated in a separate development concept plan for Hole-in-the-Wall. One objective of this development concept planning effort is to design and locate facilities to be operationally efficient in their purpose, provide unstaffed visitor information, but be visually secondary and complementary to the beauty of the natural resources.

The park would continue to maintain and enhance information on Mojave via the National Park Service website ([www.nps.gov/moja](http://www.nps.gov/moja)), and would continue to explore new opportunities for information distribution as technology develops. Mojave is also a partner in a project to provide interagency desert-wide visitor information on the internet at a single site ([www.californiadesert.gov](http://www.californiadesert.gov)).

#### **Interpretive Facilities**

##### **Kelso Depot**

Kelso Depot would be rehabilitated for use as a museum and interpretive facility. The exterior of the building would be restored to its pre-1942 appearance, as would certain interior spaces such as the Beanery, the ticket office, the conductor's room and two overnight lodging rooms. Other spaces inside

the depot would be rehabilitated for visitor information displays, natural and cultural exhibits, audiovisual exhibits, an auditorium, public restrooms, publication sales, working space for staff, conference/classroom space, and storage space. The landscaping would be rehabilitated to approximate the historic scene as much as possible, recognizing the need for parking, restrooms and concern for water conservation (see figure 5). The building would be fully accessible and provide the following primary functions:

- Visitor information and interpretation of the Preserve's natural and cultural resources
- Space for interpretive talks, videos, slide shows and educational classes on Mojave
- Some NPS administrative offices, workspace and storage for interpretive and cooperating association functions
- Some overnight rooms for volunteers, researchers or employees
- Limited food sales initially, but potential for full service restaurant at some point in the future

Besides the Depot itself, the following are other key elements of the Kelso Depot rehabilitation and visitor center strategy. Appendix B contains a development concept plan for the Kelso Depot. This plan provides a more complete description of these concepts, as well as discussions of alternative layouts and building schematics:

- Evaluate the town of Kelso for possible nomination as a historic district
- Seek to acquire (or develop partnerships) the Kelso schoolhouse and general store for possible preservation and interpretation
- Seek to acquire adjacent private lands to provide adequate space for parking and exhibits and to allow the protection of the cultural landscape of the Kelso area
- take necessary steps to secure flood dike to ensure protection of the depot during flood events
- install water well and septic system
- evaluate possible related interpretation of historic iron ore loading bin and Vulcan Mine

**FIGURE 5. KELSO DEPOT SITE PLAN**

(11 X 17, color)

Alternatives, Including the Proposed Action

Back of Figure 5. KELSO DEPOT SITE PLAN  
(11 X 17 color)

**FIGURE 6. SODA SPRINGS (ZZYZX) DEVELOPED AREA**  
(11 X 17 COLOR MAP, LANDSCAPE)

Alternatives, Including the Proposed Action

Back of Figure 6. Soda Springs (Zzyzx) Developed Area  
(11 X 17 COLOR MAP, LANDSCAPE)



**FIGURE 7. HOLE-IN-THE-WALL DEVELOPED AREA**  
(11 X 17 COLOR MAP, LANDSCAPE)

Alternatives, Including the Proposed Action

Back of Figure 7. HIW Developed Area  
(11 X 17 COLOR MAP, LANDSCAPE)

### **Soda Springs (Zzyzx)**

Interpretive opportunities at this historic desert oasis abound. This site has been used for hundreds of years, from early Native Americans, to a stage stop and public bathing site in the 1870s, to the Tonopah and Tidewater Railroad in the early 1900s, to a religious group attempting to mine gold in the nearby hills in 1914, to Curtis Springer and his Zzyzx Mineral Springs and Health Resort, and finally to its current education and research use for the last twenty years. The area also provides habitat for the endangered Mohave tui chub and offers a unique opportunity for visitors to experience and learn about the importance and diversity of desert wetland/riparian habitat.

In 2000, the NPS replaced an existing interpretive shade structure, comfort station and parking lot. These facilities would serve as the focal point for visitors coming to Zzyzx for day use. Mojave would explore opportunities for expanded day use trails in the area, and would expand the existing self-guided interpretive program and exhibits. These opportunities would be developed through the long-range interpretive plan and site specific planning. Occasional ranger-led programs may be provided. Planning, visitor use and interpretive programs in this area would be coordinated with California State University. Where possible, the ongoing desert research would be interpreted to the public.

### **Hole-in-the-Wall**

The existing visitor information contact center offers little interpretive information and is only staffed seasonally. Visitors are often frustrated when they arrive due to the lack of staff or information on the area. This proposal would be implemented to improve visitor information about recreational activities in the area, and would provide some interpretation of the natural and cultural resources. The NPS would develop a site-specific management plan for the Hole-in-the-Wall area to address visitor and administrative facilities. This effort would be guided by the following goals:

- Visitor and administrative facilities would be separated and their footprint on the landscape would be minimized. Sustainable practices would be fully incorporated as buildings are replaced or as opportunities arise.
- Overnight facilities would be relocated outside of active 100 year flood channels or warning/protective systems installed.
- Information would be provided in ways to interpret the natural and cultural history of the area regardless of the staffing of the information center.
- Disturbed areas would be restored with native vegetation and interpretive information on desert disturbance and restoration would be developed.
- The existing picnic area and group/equestrian sites would be evaluated for possible relocation.
- New trail opportunities to expand visitor use activities in the area would be considered.

### **Signing and Orientation**

The philosophy on signs would be for them to be unobtrusive, used sparingly, and that they blend with the natural environment so that the undeveloped wild character and sense of exploration remains. The National Park Service would prepare a sign plan to ensure that this vision would be carried out. The sign plan would provide for directional signs to major points of interest, which are typically located on the major roads that carry most of the traffic. Secondary or backcountry roads would remain relatively free of directional signs. The intention would be to keep visitors from becoming lost. Efforts would be made in the sign plan to use international symbols or other appropriate methods to keep signs simple and easily understood for the broad spectrum of visitors entering the parks. Because the desert can be unforgiving in the summer, emphasis would be placed in the sign plan for signs that could help protect the health and safety of visitors unfamiliar with the desert.

A variety of portable media would also be used to minimize the proliferation of signs. Technological media such as compact disks and audiotapes would be provided to give visitors portable information. Brochures and other printed material would support a self-guiding interpretive program. Information would be provided in several languages and for various learning styles. These items might be part of an advance information program. NPS employees also would emphasize visitor safety and resource protection.

NPS staff would develop an interpretive plan that would guide the overall direction and emphasis of the interpretive and educational programs. The overall objective would be to support the vision of visitors being able to experience a land relatively free of development and improvements, with opportunities to feel a sense of exploration and discovery. The staff would constantly seek to understand and respond to visitor needs while striving to improve interpretive programs and facilities. To help accomplish this goal, visitor studies would be conducted every 5–10 years or as needed to gain the appropriate information (as funds are available). The National Park Service would work with California State Parks to develop a coordinated interpretive program that would offer information on Providence Mountains State Recreation Area and the Mojave National Preserve.

Existing interpretive media would be analyzed for accuracy, effectiveness, and appropriateness; some might be removed or replaced. Interpretive services would be supported by nonpersonal media such as wayside exhibits, brochures, and publications. Personal services such as ranger-led tours and nature walks would also be available.

### **Wayside Exhibits**

A minimal number of road or trailside interpretive wayside panels would be installed. Displays typically would be placed along paved or other heavily traveled roads to interpret significant and interesting resources visible from each area. Safety and orientation panels would be installed at key trailheads, developed campgrounds and other high visitor use areas such as Kelso Dunes. Care would be taken to make and keep these displays as unobtrusive as possible and secondary to the landscape they were interpreting. The objective behind this proposal is to provide a landscape relatively free of exhibits or signs so that visitors could experience a sense of exploration and discovery. Signs would be posted in parking areas asking visitors to check for tortoises under their vehicles before leaving parking areas.

### **DEVELOPED CAMPGROUNDS**

Mojave would retain the two existing developed campgrounds at Mid Hills and Hole-in-the-Wall that together provide 61 campsites. Ongoing improvements to existing campgrounds would continue as described in the existing management alternative. Campsites and trails in the Mid Hills campground would be redesigned over the coming years to increase the level of accessibility for people with disabilities and to resolve other concerns. Campsite densities would not be increased. If visitation significantly increased to the point where many visitors were being turned away during most of the peak season, a campsite reservation system would be considered.

One new semi-developed campground with fewer services and smaller numbers of campsites (approximately 15) would be considered through a separate planning effort.

**FIGURE 8. GRANITE MOUNTAINS NATURAL RESERVE**

(8 ½ x 11 COLOR MAP, PORTRAIT)

Alternatives, Including the Proposed Action

Back of Figure 8. Granite Mountains Natural Reserve  
(8 ½ x 11 COLOR MAP, PORTRAIT)

## **RESEARCH AND EDUCATION CENTERS**

This section specifically addresses ownership and maintenance of facilities at existing research and education centers in Mojave National Preserve. The Partnership section of this document addresses the NPS education and research mission and mandate, and partnership opportunities with universities to fulfill this mission. Use of the park as a natural laboratory for scientific study, research permits and collections are addressed under Research and Educational Activities. Both of these topics are addressed under Actions Common to All Alternatives.

### **Soda Springs Desert Study Center**

The CDPA (section 514) calls for a cooperative management agreement between the National Park Service and California State University to manage facilities and provide desert research and education at the Soda Springs Desert Study Center. This center operates at Zzyzx in facilities and land owned by the federal government. The cooperative agreement would define use and maintenance responsibilities of the buildings and other facilities between CSU and the NPS. Buildings not routinely use by CSU may be considered for park offices or housing, especially where an NPS presence would assist in supporting and protecting facilities and provide staff to interact with public not associated with CSU programs.

By virtue of its inclusion within the Mojave National Preserve, and as specified in law, the area must be managed consistent with federal laws and NPS policy and regulations. Many historic structures are located at this desert oasis, which has served as a desert research and educational facility for over twenty years. Historic structures, cultural landscapes, and other cultural resources must be maintained in accordance with the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. The NPS and the public could benefit from a continued partnership with CSU to provide for continued maintenance and security of the facilities, offering of educational activities on desert resources for the public, and to attract scientific interests to pursue research in the Preserve.

### **Granite Mountains Natural Reserve**

Section 513 of the CDPA designated the Granite Mountains Natural Reserve (see figure 9) and called for a cooperative management agreement between the National Park Service and University of California to manage facilities and provide desert research and education. The Granite Mountains Natural Reserve is one of a series of Reserves managed by the University of California throughout California. The purpose of these reserves is to manage, protect and preserve sites that are undisturbed examples of California's extraordinary and diverse habitats for long term scientific research and for public education. On federal lands, this State purpose must be balanced with the park purpose and mission of protecting resources for visitor enjoyment.

The 9,000 acre Reserve lies in the Granite Mountains in the southeast corner of Mojave National Preserve. The University of California owns fee title to 2,200 acres of the Reserve, while most of the remainder is owned by the federal government and managed by the NPS. A twenty-acre patented mining claim is also privately held inside the Reserve. Housing, classroom facilities, a library and office space was constructed and are maintained by the university on State land. No facilities are located on federal land. The University of California has sole authority for the use and maintenance of their facilities.

The NPS would cooperate with the Reserve to develop informational kiosks for key entry points to provide information to the visiting public about the purpose of the Reserve, the NPS mission, and the need to exercise caution when visiting the area so as to not inadvertently disturb research projects.

## **PARK SUPPORT FACILITIES**

The National Park Service intends to locate some facilities outside the Preserve, consistent with the existing management direction and proposed actions identified in this plan. This would include, but is not limited to, the headquarters site in Barstow, visitor facilities in Baker and Needles, and possibly employee housing, offices or maintenance shops in Baker or Essex.

### **Headquarters**

Headquarters for Mojave National Preserve would continue to be located in the Barstow area. Space would be provided for the superintendent's staff, administration, planning, visitor services, resource management, special uses, and other central administrative offices. In addition, Mojave would pursue opportunities to co-locate with desert management partners where such use would improve public access to agencies and information.

### **Field Offices**

Field offices are needed to provide working space for park rangers, resource and maintenance staff. A building was added to the Baker administrative site in 1997 for this purpose. Similar offices are needed at other locations in the Preserve. The specific location and design of these buildings would be addressed in site specific development concept plans for these areas. Areas of prime consideration include Cima, Kelso, Lanfair Valley and the Hole-in-the-Wall vicinity. Sites with other existing development, electrical and phone service would receive first consideration. Facilities acquired from willing sellers would be evaluated in accordance with NPS policies for adaptive use as administrative sites.

### **Maintenance Facilities**

A central maintenance facility is needed to provide storage and work space for maintenance activities. Baker currently serves as the interim central maintenance operation, taking care of most short-term maintenance needs. One option under consideration is the addition of a maintenance area to the new interagency fire center (see below). New facilities such as shops, enclosed storage, and offices might be constructed alongside this facility. A separate site plan would be done for this development. The National Park Service would consider the option of contracting for some maintenance services if it would make economic and practical sense. General areas that would be considered for a central maintenance function include Cima, Hole-in-the-Wall vicinity, Lanfair Valley and Essex.

### **Interagency Fire Center**

Wildland fire management operations would continue to be managed in cooperation with the Bureau of Land Management. Facilities for a seasonal interagency fire crew of fifteen, two large fire trucks, and support vehicles and equipment are necessary in close proximity to the historical fire occurrence. The fire crew responds to wildland fires throughout the Preserve, and extending south to Joshua Tree National Park and north to about Shoshone. Natural lightning caused fires occur primarily in the line of mountains extending from Granite Mountains to the Castle Peaks on the Nevada state line. In addition, vehicle fires along interstates 15 and 40 during the hot summer months threaten park resources.

An existing dormitory, office and garage at Hole-in-the-Wall are being replaced due to their poor condition. A value analysis process was utilized to consider the advantages of various building designs and about twelve alternative site locations. A separate development concept plan and environmental assessment for the entire Hole-in-the-Wall area is currently being developed. This plan would consider



the top three locations for the fire center, as well as address other visitor facilities. Construction funding to replace the existing fire center is available in FY00.

### **Employee Housing**

Most employees are not offered government housing, and must find their own residence on their own based on their assigned duty station location. However, some field positions, such as protection rangers and maintenance staff may be duty stationed at locations inside the park in order to have an onsite presence. It is also necessary to have short response times for these positions in the event of an emergency. At the present, a one bedroom housing unit and a studio apartment are available in the Hole-in-the-Wall area. In addition, the park leases a mobile home in Kelso from Union Pacific railroad to serve as housing and office space for a ranger position. Five mobile homes are also available for employee housing in the Baker compound.

When staffing levels exceed available NPS and private housing in Baker, new housing would be constructed to replace the existing double-wide trailers. Construction of new housing in Baker outside the existing yard would require appropriate approval and would depend on the availability of funding to buy private land to construct housing. The NPS would also consider leases or similar agreements with private parties to ensure housing for employees. Until then, the National Park Service would continue to upgrade the existing double-wide trailers where possible. NPS employee housing would not be provided in Needles or Barstow; rather, employees would find housing on the open market.

If existing homes in the Preserve were acquired by government purchase or donation, the park would evaluate the historical and aesthetic value, management needs, and the cost effectiveness of bringing these homes up to current standards. Standards and guidelines would include current NPS housing guidelines, building codes, historic preservation guidelines and standards, accessibility and energy conservation. Housing might be renovated, replaced, stabilized or removed as appropriate.

Before upgrading or renovating existing acquired homes or constructing new housing for employees, the National Park Service would evaluate the location of the housing and determine whether private housing within a one hour drive could serve the same need, and whether the total housing units are the minimum necessary to meet the mission of the Preserve. New housing construction would be considered when the evaluation step determined that renovation was not practical from an economical or operational standpoint and that the home had no historic significance.

As space permits, some of the upper rooms in the Kelso Depot might be used for temporary overnight lodging for staff, researchers or volunteers conducting fieldwork. Additional housing for employees in the Kelso area would also be pursued to support park programs. Housing may also be provided at the Hole-in-the-Wall area as positions are filled and adequate housing within a one-hour drive is unavailable outside the Preserve. A housing management plan is being prepared to consider the number and types of units necessary to meet the mission of the Preserve.

### **ACCESS AND CIRCULATION**

Mojave National Preserve offers visitors a broad range of access options. Existing developed roads range from unmaintained primitive jeep roads to paved highways. A network of over 2,000 miles of roads is available (refer to map in back pocket). Hundreds of miles of old roads in wilderness, as well as developed hiking trails, and cross-country hiking provide foot and horseback access to all of the diverse and remote reaches of the Preserve. In addition, the Union Pacific railroad traverses the center of the Preserve and provides a unique opportunity for seeing some of the inaccessible portions of the area, especially through the Devil's Playground.

## **Roads**

No major changes would be made to the existing roads. Some limited improvement of heavily used roads might be undertaken when funds permitted, such as the addition of crushed rock to the Kelso Dunes and Soda Springs access roads. Vehicle use would be limited to street legal vehicles. No offroad driving would be permitted. Driving in desert washes is not permitted unless they are shown as a developed road on park maps. These routes are usually easily identified on the ground, even after storms, due to the distinctive lack of vegetation from years of use forming a road alignment. Tracks caused from one or two vehicle passes do not establish a road.

To provide detailed guidance for managing the Preserve's road system, a road management plan would be prepared to evaluate the need for duplicate road sections, road surface conditions, and the appropriate level of maintenance. The management philosophy would be to enhance the visitor experience while providing for safe and efficient accommodation of park visitors and also protecting the natural and cultural environment. It also would include the need to provide a road system that would allow for a variety of driving experiences consistent with the purpose and significance statements, as well as the desired future conditions for the Preserve.

### **Paved Roads**

The county of San Bernardino would continue to maintain the paved roads throughout the Preserve under a cooperative agreement with the NPS. An inventory of these roads, totaling about 176 miles, would be included in the cooperative agreement. In accordance with NPS regulations at 36 CFR 4.2.1, and to assure the safety of visitors and protection of park resources, the speed limit on all paved roads may be reduced to 45 mph in areas or during periods where such a reduction is warranted. Signing along these roads would be a joint responsibility, with the county installing and maintaining most regulatory signs, while the NPS would install and maintain interpretive and directional signs.

### **Maintained Dirt Roads**

The county of San Bernardino would continue to maintain the graded dirt Cedar Canyon, Black Canyon, Ivanpah, and Lanfair Valley roads (approximately 79 miles). The National Park Service maintains graded dirt access roads to Zzyzx, Kelso Dunes and Wild Horse Canyon road (approximately 20 miles). The cooperative agreement with the county would identify limited existing sites for equipment and materials storage, and specify road maintenance standards, lengths and widths. As with paved roads, signing along these roads would be a joint responsibility, with the county installing and maintaining most regulatory signs, while the NPS would install and maintain interpretive and directional signs.

### **Backcountry Dirt Roads**

High-clearance and four-wheel-drive roads would not be routinely maintained by the Preserve or the County. However, emergency repairs or limited maintenance might be undertaken by the NPS or volunteer groups under cooperative agreements. Some private landowners that reside in the Preserve or organized groups may do limited maintenance on certain roads such as dragging the road or using a small tractor. Where these roads cross federal land, the NPS would require a permit for such routine maintenance. This permit is necessary to assure that no tortoise are harmed by the activity, and the maintenance is done in accordance with NPS standards. Backcountry users that encounter washed out roads during their visit may make emergency repairs using hand tools, if required for them to exit an area.

Some pre-existing backcountry roads were included in wilderness areas by Congress and are no longer open to mechanized or motorized use. These routes are posted with carsonite or wooden signs and may not be used by mechanized or motorized vehicles of any kind, including bicycles, pursuant to the Wilderness Act. The map in the back pocket of this document shows roads open to mechanized and motorized use.

### **Mojave Road**

The Mojave Road would remain open for street legal vehicles, mountain bikes, equestrians, and hikers. Interpretive information would be available at visitor and information centers to enhance the public's understanding of features along the road. Opportunities to interpret significant features along the road would be considered. Information would stress proper low impact camping and travel techniques. The National Park Service would consider grant business permits for commercial guided tours of the road to provide visitors without the appropriate vehicle an opportunity to experience this resource.

Maintenance of the Mojave Road would be considered in a road management plan for the Preserve. Under that plan, general guidance would be given to allow the Mojave Road to develop its own character with minor maintenance action until the plan was completed. Maintenance generally would be limited to repairs needed to allow continued passage by vehicles currently using the road. The National Park Service would seek partnerships with volunteer groups to help with maintenance of the road and other features in the road corridor.

Large groups would be required to camp at designated areas and obtain a special use permit (see Groups and Organized Events section for details). Areas that would be considered for large group use would be Grotto Hills, Willow Wash, Seventeen Mile Point, the southeastern edge of Soda Lake in the Cow Hole Mountains, and the area known as the Granites, which are southwest of Soda Lake. Other areas might also be considered. The number of large groups using the road would be managed through the special use permit system. The intent of this action would be to keep adverse impacts low and avoid conflicting demands for camping space. This proposal would be further addressed under a future backcountry or visitor use management plan.

Nomination forms are being prepared to nominate the historic Mojave Road to the National Register of Historic Places. The National Park Service would strive to maintain the experience of solitude, adventure, and a sense of exploration for visitors traveling the Mojave Road. NPS rangers would patrol the road to offer emergency assistance and protect cultural and natural resources. The National Park Service would work to educate unprepared visitors about the rough character of the road. The primary guides for route finding would be the traditional rock cairns, along with maps, guidebooks, or other media.

Camping along the Mojave Road would be subject to management decisions made for roadside camping. Baseline information would be collected to determine use trends, the physical condition of the road, and conditions of natural and cultural resources adjacent to the road and at associated camping areas. When high use levels or inappropriate visitor behavior caused unacceptable impacts on the road or resources or negatively affected the quality of the visitor's experience, management actions would be taken to correct these problems. Standards for visitor use and resource conditions would be established after baseline information was gathered and evaluated in the backcountry or visitor use management plan.

## Trails

The backcountry/wilderness management plan would address trail use by hikers, equestrians, bicycles, and visitors with disabilities. The plan would identify the type and intensity of trail development, including the number of signs, trails, and trailheads, long distance trails extending into Bureau of Land Management or California State Parks and other jurisdictions, and anticipated maintenance levels for developed trails. The plan would be guided by the goal of increasing the diversity of recreational opportunities for the above activities in appropriate locations. Until completion of the plan, all trails would be open for use by hikers and equestrians, except where management problems were identified and restrictions needed to be established.

Existing roads that are now included within wilderness areas are closed to use by mechanized and motorized vehicles, but are open for other uses, including use by wheelchairs in accordance with NPS policy. During the trail planning effort, these roads would be evaluated for restoration or possible conversion to single track hiking trails.

## RIGHTS-OF-WAY AND EASEMENTS

There are an estimated 125 rights-of-way and/or easements within the Preserve. Some of these are entirely within the boundary, while others enter the Preserve and may terminate within or pass through. Some of the major rights-of-way and/or easements are listed below.

<b>Right-of-Way/Easement</b>	<b>Purpose</b>
AT&T	Underground communications cable
Southern California Edison*	Electric transmission line, aerial
Southern California Gas Co.*	Natural Gas pipeline
Cal-Nev	Oil pipeline
Molycorp*	Waste water pipeline
Pacific Bell	Communication site
U. S. Sprint	Telephone line
Union Pacific	Railroad
Southern California Gas Co.	Petroleum pumping station

*\*Congress provided specific direction in section 511 of the California Desert Protection Act on these rights-of-way/easements.*

Additional research and record checking over the next several years would be conducted in order to adequately document all the existing rights-of-way/easements and develop an administration plan. Mojave would convert existing rights-of-way to NPS standards and regulations wherever possible. If the right-of-way is no longer needed or its use is being converted to new technology, Mojave would seek to relocate the operation outside the Preserve. Abandoned rights-of-way would be restored by their holders. In addition, the NPS would develop a procedure to administer annual fee/rental collection. At the present time the BLM collects and retains all annual fees/rentals associated with rights-of-ways/easements in the Preserve. In some instances acquisition of the interest may be appropriate or warranted.

All proposed changes would be reviewed for impacts to the environment and all grantees of rights-of-way/easements would be educated regarding environmental concerns relevant to their authorized use. Agreements would be sought where necessary to protect Preserve resources.

## **Railroads**

The Union Pacific railroad line traverses the center of the Preserve for 91 miles, from Nipton, through Cima and Kelso, and to the southern edge of Soda Lake. This railroad right-of-way (ROW) is a 200 foot wide corridor that was granted by Congress in 1875. The railroad operates this line as a major regional freight corridor to southern California, servicing as many as 30 freight trains per day. Union Pacific also owns land in the Kelso Depot area and houses a small crew there in several mobile homes.

The line through the Preserve is currently a single set of tracks, with five sidings for passing located between Kelso and Cima. Union Pacific is currently pursuing permits to construct a second set of tracks parallel to the existing set, extending from Kelso Depot to Cima. This project would allow the return of passenger train service from Los Angeles to Las Vegas, provided by Amtrak. Review of this double-tracking proposed is occurring under separate compliance. If passenger train service resumes, the National Park Service would coordinate with Amtrak on the feasibility of placing NPS information and interpreters on trains and allowing passengers to stop at Kelso Depot. The National Park Service would support the communities of Barstow, Nipton, and Primm in the establishing passenger train stops at these locations, with the anticipation of also establishing a stop at the Kelso Depot. Where feasible and appropriate, the National Park Service would also support the concept of using rail as an alternative form of transportation for visitors entering the Preserve.

Burlington Northern and Santa Fe also operates a major regional railroad line that parallels the southern boundary of the Preserve in some locations. East of Goffs, the railroad forms the Preserve boundary, with the tracks being outside the Preserve. This railroad does not enter the Preserve, but operations adjacent to the Preserve may impact park resources.

The park would pursue cooperative agreements with both railroads to address issues such as spill response, emergency operations, permitting, maintenance of dikes that extend onto federal lands, use of pesticides and herbicides, and other relevant issues.

## **Roads**

Most of the roads in the Preserve were constructed without rights-of-ways or easements being granted. The county of San Bernardino contends that all established roads in the Preserve are valid RS-2477 rights-of-ways. Revised Statute 2477 concerns rights-of-way established across public lands under the Mining Act of 1866. Although repealed by Congress in 1976 with enactment of the Federal Land Policy and Management Act, routes that existed prior to October 21, 1976 may “qualify” as an RS-2477 right-of-way. However, a right-of-way asserted under RS-2477 is not automatically assumed to be valid. Regardless of whether a party can successfully assert a valid claim to a right-of-way across national park land, the NPS retains the authority to regulate use of an RS 2477 right-of-way. *See U.S. v. Vogler*, 859 F.2d 638, 642 (9<sup>th</sup> Cir. 1988).

**FIGURE 9. MAJOR RIGHTS-OF-WAY**  
(8 ½ X 11 B&W MAP, LANDSCAPE)

## **WILDLIFE GUZZLERS**

Approximately 130 small game and six big game guzzlers were installed throughout the Preserve by agencies and interest groups over the last 60 years. The artificial waters were installed to enhance or replace natural waters for wildlife use. The National Park Service would examine the use of and need for all big game and small game guzzlers. Guzzlers would be retained for native wildlife if they are found to be necessary to replace water lost due to actions taken by previous human activities. These developed water sites would be retained to allow native populations of plants and animals to return to or remain at a previously undisturbed population level. Simultaneously, with the retention of these developed water sites, the National Park Service would actively begin to restore natural water sources to be self-sustaining. When a water source became self-sustaining, the artificial facility would be removed. The National Park Service has no jurisdiction on developed water sites on private land. The park would modify existing water developments (mostly small game guzzlers) to prevent desert tortoise from gaining access and to ensure they are able to escape from them.

Motorized access to guzzlers in wilderness would be considered extraordinary and would not be routinely allowed unless unusual circumstances warranted it. These instances would be considered on a case-by-case basis. A minimum tool determination would be used prior to granting approval for motorized/mechanical equipment use within wilderness. Mojave National Preserve would follow the “Principles for Wilderness Management in the California Desert” (appendix F), the Wilderness Act, and the California Desert Protection act in the administration of the park’s wilderness areas. Routine access for monitoring purposes would be by foot or horseback. Each water development in wilderness would also be examined in light of the restrictions in the Wilderness Act on structures and installations.

## **RANCHING DEVELOPMENTS**

Developments associated with ranching operations have been installed throughout the Preserve over the last 100 or more years. Hundreds of miles of barbed wire fences and water pipelines, as well as dozens of cattle guards, windmills, water tanks, troughs, corrals, earthen reservoirs, houses, barns, sheds and other structures exist to support the ranching operations. Maintenance of most of these facilities is the responsibility of the rancher who benefits from their use. Some fences, water tanks, pipelines and windmills are the responsibility of the NPS, the County or Caltrans (along I-15 and I-40). During the grazing management plan development, specific detailed lists and maps of the locations, ownership and maintenance responsibility of all these developments would be prepared.

Water is necessary for livestock grazing on NPS lands and these waters are controlled by the rancher to facilitate movement of livestock. If and when a grazing permit is purchased by a third part and donated to the NPS for retirement, most ranching developments would be removed following cultural resource inventory and analysis. Some of these developments may be retained as important features of the ranching history of the area. Others may be retained if necessary for wildlife purposes, or where needed for other park resources management projects (i.e. burro removal or a park horse operation), park housing, or administrative use.

## USE OF THE PRESERVE

The National Park Service Organic Act directs the Service to preserve park resources “unimpaired,” while providing for public enjoyment of those resources. Because public enjoyment cannot be sustained if park resources are damaged or compromised, resource protection must necessarily be the Service’s paramount responsibility. Within that constraint, the Service recognizes its obligation to provide for a broad range of educational, healthful, enjoyable, and otherwise appropriate activities that foster a continuing public appreciation for park resources and values.

### **RECREATIONAL ACTIVITIES**

It is recognized that recreational trends continue to change and that specific, detailed directions on certain activities need to be placed under a guiding statement providing overall direction. *NPS Management Policies* provides guidance for determining the appropriateness of recreational activities in units of the national park system.

Unless the activity is mandated by statute, the National Park Service would not allow a recreational activity within a park if it would involve any of the following results:

- inconsistency with the park’s enabling legislation or proclamation or derogation of the values or purposes for which the park was established
- unacceptable impacts on visitor enjoyment due to interference or conflict with other visitor use activities
- consumptive use of park resources (does not apply to certain traditional activities specifically authorized by NPS general regulations)
- unacceptable impacts on park resources or natural processes
- unacceptable levels of danger to the welfare or safety of the public, including participants

*NPS Management Policy* also states that each unit of the national park system is responsible for determining which recreational activities are appropriate or inappropriate, based upon the unit’s purposes and values (see the purpose and significance statements for Mojave National Preserve).

### **Rock-climbing**

The management goal would be to allow climbers to enjoy their experience with a sense of challenge in a manner that would leave the environment relatively unchanged or impacted, allowing future climbers an opportunity for a similar experience. Climbing would be managed for the following objectives.

- protecting cultural resources such as rock art and historic or prehistoric sites
- protecting natural resources, including threatened and endangered plants and animals
- protecting wilderness resources and values from visual and physical impacts
- protecting the outdoor recreational experiences of visitors not participating in rock-climbing
- developing an open communication line with the climbing community to promote a spirit of cooperation in achieving objectives and resolving problems
- promoting clean climbing methods and environmentally-friendly climbing equipment

The National Park Service would seek ways to educate the public on proper climbing ethics and outdoor skills such as those promoted by the National Outdoor Leadership School’s “Leave No Trace” program for climbing. Mojave would work with groups such as the Access Fund to educate the park’s



climbing community. Mojave would monitor rock-climbing use levels and related activities in the coming years to determine the effectiveness of current management in achieving the previously mentioned goals and objectives.

Power drills would not be allowed in the Preserve at any time. Chipping of rock faces and gluing of holds onto the rock would be prohibited, as would intentional removal of vegetation from climbing routes. Climbing would not be permitted within 500 feet of any prehistoric or historic rock art site or other cultural resource.

Existing bolts and other fixed anchors that are deemed unsafe by climbers could be replaced on a piece-by-piece basis. Replacement of existing bolts would be accomplished in a manner that removes the old bolt with minimum damage to the rock. Whenever possible for the safe replacement of an existing bolt, the existing bolt hole would be utilized for the replacement bolt. If use of the existing hole is not possible, the old hole would be filled with a natural colored rock material blended with bonding agents to permanently fill the hole.

NPS would require that all bolts and other fixed anchors, chalk, slings, quick draws, and any other piece of equipment that would be left on the rock for an extended period, be of an environmentally-friendly color. Permanent climbing anchors would be prohibited within direct sight, or 500 feet of the Hole-in-the-Wall visitor center. Leaving fixed ropes for extended periods for the purpose of ascending and descending (rappelling) rock walls is not allowed.

Mojave recognizes that the Clark Mountain area is heavily used by desert bighorn sheep. Questions exist as to the potential for climbers to impact the Clark Mountain sheep population, especially during lambing season (February–June). Mojave would study climbing impacts to sheep, and if necessary, impose seasonal closures on visitation to Clark Mountain in order to protect the bighorn. The study itself could include a temporary closure on visitation to Clark Mountain to serve as a scientific control period.

Those lands in the Granite Mountains Natural Reserve that are owned by the University of California are dedicated to the purposes of scientific study and education. The university prohibits rock climbing on their lands because they consider this use to be incompatible with their scientific mission and due to the potential for damage to long-term research plots.

NPS would discourage multiple social trails and heavily impacted zones at the base of climbs, and would employ barriers, revegetation, and possible closures as a means to prevent these impacts. Mojave reserves the right to close any area, rock feature, or climbing route to protect wildlife, natural or cultural resources, or wilderness experiences. NPS authority for closures is granted in 36 CFR 1.5.

### **Hunting, Fishing and Trapping**

Section 506(b) of the CDPA provides for hunting, fishing and trapping within Mojave National Preserve, in accordance with applicable Federal and State laws. Congress also clearly provided the NPS with a mandate in our 1916 Organic Act, to preserve wildlife, and other resources within park units. They also reiterated in the CDPA our mandate to preserve wildlife by affording the new Preserve full recognition and statutory protection to establish periods when, no hunting, fishing, or trapping would be permitted for reasons of public safety, administration, or compliance with provisions of applicable law.

Therefore, it is appropriate to recognize public safety and resource protection issues during this plan development, and to formulate a policy that would balance the mandate from the CDPA with the NPS resource preservation and visitor enjoyment mission. The goals of the proposal are to provide better

protection to desert tortoise and other park resources and to enhance visitor safety. It is also to strike a balance with the mission of the park, which is preservation of resources. The proposed action provides opportunities for hunters to take game species during the fall and winter, while also providing a park experience with no hunting or shooting during the spring and summer.

Hunting would generally follow existing California Department of Fish and Game (CDF&G) regulations, except the Preserve would seek the following special regulations:

- Hunting would be limited to small game (cottontail rabbits, squirrels), upland game birds (mourning dove, quail, and chukar), and big game (deer and bighorn sheep) during their designated CDF&G seasons. These normally occur between September and the end of January.
- The hunting season for the Preserve would be from September 1 to January 31 (except through the first Sunday in February for bighorn sheep). This is the same season as the Providence Mountains State Recreation Area (Section 260.1 California Hunting Regulations, 1999).
- Use of hunting dogs would be allowed in accordance with State hunting regulations, and to protect visitors and wildlife, must be in the owner's control at all times.
- For public safety, shooting of rifles would not be allowed within one mile of Mid Hills campground; the Hole-in-the-Wall area as measured from the visitor center; Kelso Depot; Cima; Piute Creek; the Soda Springs Desert Study Center; and Granite Mountains Natural Reserve.
- CDF&G regulations regarding shooting near public buildings and paved roads would apply.
- Target or random shooting (plinking) is not allowed anywhere in the Preserve.

Trapping within the Preserve would follow California's 1998 Proposition 4 to the extent that it does not conflict with federal wildlife management. In very limited circumstances the superintendent would allow trapping by designated individuals to remove (trap or shoot) animals that are a hazard to visitors or park resources under the authority provided by 16.U.S.C 3.

Fishing would follow existing CDF&G fishing regulations, except the collection of nongame birds, reptiles, amphibians, and invertebrates would not be permitted without a valid NPS scientific collection permit issued under NPS regulations (CFR 36 2.2 b.4 & 2.5.a).

**FIGURE 10. NO SHOOTING AREAS**

(8 ½ X 11 B&W Map, Landscape)

## **Hiking**

Hiking is encouraged throughout the Preserve, both on developed trails and cross-country. Groups and organized events would need to obtain a permit. The backcountry/wilderness management plan would address trail use by hikers, equestrians, bicycles, and visitors with disabilities. The plan would be guided by the goal of increasing the diversity of recreational opportunities for the above activities in appropriate locations. Until completion of the plan, all trails would be open for use by hikers and equestrians, except where management problems were identified and restrictions needed to be established.

## **Equestrian Use**

All trails would be open for use by hikers and equestrians, except where management problems were identified and restrictions needed to be established. Horses may also travel cross-country. Groups and organized events would need to obtain a permit. Large horse groups may be restricted to existing roads.

## **Bicycling**

Bicycles would be allowed on all open roads, but not on single-track trails, in wilderness, or off existing roads. The backcountry/wilderness management plan would consider the feasibility of designating dirt roads as bicycle routes. Groups and organized events would need to obtain a permit.

## **Motorcycles and ATVs**

Street legal, licensed motorcycles are permitted on open roads in the Preserve. All terrain vehicles (ATVs) such as three-wheelers and four-wheelers are not permitted. Motorcycles must have mufflers that permit normal conversation when the engine is idling. Groups and organized events would need to obtain a permit.

## **Aircraft**

There are no designated airstrips in Mojave National Preserve on public lands. Landing of aircraft on roads, dry lakes, or other areas of the Preserve is not allowed. Use of private aircraft must be in accordance with FAA regulations, which provide for a recommended minimum altitude over parks of 2,000 feet.

## **Backcountry Use and Roadside Vehicle Camping**

Roadside vehicle camping would continue to be allowed only in previously used areas along open routes of travel, outside of wilderness. Vehicles may not leave the road surface at any time or park on vegetation. There are many of these existing campsites along dirt roads.

Mojave would inventory previously used campsites and prepare a backcountry/wilderness management plan that may provide additional restrictions. Until the plan is completed, the Preserve would manage roadside camping with the following conditions:

- Roadside camping would be allowed in previously used sites outside the day use only area.
- Campsites must be more than 200 yards from any natural or constructed water source.
- Groups and organized events would need to obtain a permit.
- Vehicles must remain in previously disturbed areas. The creation of new campsites would not be allowed. Driving off roads would not be permitted.
- Campfires would be allowed in existing fire rings, or in a fire pan. Visitors are not allowed to collect firewood in the Preserve.

- Backcountry structures on public lands would remain available to the public on a first come basis.

Backcountry campers may camp anywhere in the Preserve outside of designated day use only areas but must erect their tent out of sight of paved roads.

### **Camping at High Use Areas**

The BLM management plan for the East Mojave Scenic Area called for the designation and marking of specific campsites in locations that are consistently heavily used by individuals or groups. It is proposed that this recommendation be adopted by limiting camping to designated campsites in high use areas. Resource conditions and visitor use would be monitored to determine the need for designating sites such as Caruthers Canyon, Cima Dome, Cinder Cones, Clark Mountain, Granite Pass (Kelbaker Road), and Grotto Hills. Other locations could be identified as information on visitor use was gathered. Campsites would be marked for easy identification by some means, but other improvements would be avoided unless proposed improvements would help protect resources

### **Camping in Desert Tortoise Critical Habitat**

The primary issue with roadside vehicle camping is to ensure that visitors do not disturb tortoises they encounter and, to prevent tortoises from being crushed, ensure that campers inspect underneath their vehicles before moving them to ensure tortoises have not crawled under them for shade. The park literature on camping in the backcountry would be modified to include information about the desert tortoise and actions the public should take when camping in desert tortoise habitat.

The National Park Service would adopt guidance provided by the Bureau of Land Management's plan for the East Mojave Scenic Area, which calls for an evaluation of roadside camping areas within or adjacent to sensitive resources to determine if there is a need to relocate camping within the same general vicinity to protect resources. This might require the closure of some campsites. Further studies would be conducted to determine the limits of acceptable change that these areas could withstand while maintaining the desired cultural or natural resource conditions and a quality visitor experience. Previously used campsites could be considered open unless designated as designated as closed.

### **No Camping Areas**

Certain areas are designated to prohibit roadside vehicle camping to protect the Preserve's natural and cultural resources, protect the viewsheds, and reduce conflicts in visitor activities or other management objectives. The following areas would be designated as no camping areas to avoid potential conflicts between recreational day visitors and overnight campers.

- All areas within ¼ mile of paved roads, unless formally designated as a camping area.
- The access road to the Kelso Dunes, the parking lot, and the area north of the road to the crest of the dunes, or a distance of 1 mile, and the area ¼ mile south of the road.
- All areas within ¼ mile of the access road to Zzyzx, including the visitor parking lot.
- All areas within ½ mile of Fort Piute.
- All areas within ½ mile of the Kelso Depot.

**FIGURE 11. NO CAMPING AREAS**

8 ½ x 11 B&W

## Groups and Organized Events

A permit is required for all organized events in the Preserve, and for group activities over a certain size. Organized events may include school groups, hiking clubs, jeep tour groups, bicycle rides, motorcycle clubs, hunting clubs, scouting groups, and other similar types of group gatherings. Organized events may be required by NPS regulations (36 CFR 2.50c) to: (1) post a bond covering the costs of the event, such as restoration, rehabilitation cleanup and other costs, and (2) provide liability insurance to protect the United States against liability arising from the event. Casual group activities (non-organized) may also require a permit depending on the number of vehicles (including motorcycles, bicycles and horses) and individuals involved in the activity.

The NPS requires a permit for group activities and organized events because of several issues and concerns that may arise when groups travel and/or camp together. The purpose of the permit is to provide information to the group regarding potential impacts of their activities on park resources, private property or other park visitors. The NPS is also responsible for reviewing the environmental impacts of the activity and ensuring protection of park resources, including threatened and endangered species. The permit serves as the means of requiring information needed for the environmental review, and to stipulate certain conditions to prevent impacts.

The following questions would be reviewed to determine whether a permit is needed:

1. *Is the group activity an “organized event”?* If yes, a special use permit is needed. If no, go to question 2.
2. *Are 15 or less individuals participating in the group activity?* If yes, go to question 4. If no, go to question 3.
3. *Are more than 25 individuals involved in the group activity?* If yes, a special use permit is needed. If no, go to question 4.
4. *Are more than seven vehicles being used by the group?* If yes, a special use permit is needed. If no, a permit is not needed.

If the group size or activity requires that a special use permit be issued (see questions above), then NPS regulations require a fee be charged. Fees for a special use permit are required by regulations to be sufficient to cover all administrative costs in processing them and vary depending on the nature and purpose of the activity and the complexity of the permitting process. Organized events and group activities where the permit process, environmental review and stipulations are fairly simple and no onsite monitoring by NPS staff is deemed necessary would be charged between \$50–200. Organized events and group activities that require extensive stipulations, completion of an environmental assessment or impact statement, and/or require onsite NPS monitoring would be charged the full cost of permit processing and compliance, NPS monitoring costs and may be required to post a bond. Nonprofit events or group activities that provide education on natural and cultural resources of the desert may be eligible for a partial fee waiver.

## Visitor Use Fees

Fees and their use are determined in accordance with the criteria and procedures of the Land and Water Conservation Fund Act of 1965 (sec. 4, 16 U.S.C.A. 4601-6a (Supp., 1974) and section 3, Act of July 11, 1972, 86 Stat. 461), the Recreational Fee Demonstration Program (P.L. 104-134), and regulations in 36 CFR 71. The Preserve would continue to explore options for fee collection revenues consistent with congressional direction. An entrance fee study would be prepared in the future.

In April 2000, the National Park Service, in a partnership with the National Park Foundation, announced a new National Parks Pass. A parks pass provides entrance to all national parks for one

year at a cost of \$50. Parks selling the pass would be allowed to retain \$35 for use on projects at that park. These passes are sold at all national parks and over the internet via several retail partners. Mojave sells this pass as a public service, even though an entrance fee is not required to enter the Preserve. The only other visitor use fees collected in Mojave National Preserve are camping fees for developed campgrounds and the group area at Hole-in-the-Wall. Fees are also collected for special use permits (such as filming, organized group outings, etc.).

## **COMMERCIAL ACTIVITIES**

### **Mineral Development**

The Preserve would manage mineral development activities under existing laws and regulations applicable to such activities. This action is the same as the existing management alternative, which is described below.

The Preserve was established by Congress with the provision that mining activities may occur on valid existing claims under all applicable laws and regulations administered by the National Park Service (sec. 508). The Mining in the Parks Act of 1976 (P.L. 94-429) prescribes that all activities resulting from the exercise of valid existing rights on patented and unpatented mining claims within any unit of the national park system shall be subject to regulations developed and administered by the National Park Service. The regulations governing mining on all patented and unpatented claims in park units are found at 36 CFR Part 9A, which requires operators to file a plan of operations with the National Park Service for all mineral related activities. Proposed mining operations must also meet the approval standards provided in the regulations and post a performance bond equivalent to the cost of reclamation before an operation may proceed.

No specific mining is authorized by this general management plan. Each mining proposal is required to submit a detailed mining and reclamation plan and undergo separate environmental impact analysis. Consultation for listed species and cultural resources would occur at that time. When mining is authorized, full reclamation of the site is required upon cessation of mining activity.

Congress closed Mojave to all new mining claim location and all other forms of appropriation and disposal. Section 507 of the California Desert Protection Act withdrew the area from all forms of entry, appropriation or disposal under the public land laws; from location, entry and patent under the United States mining laws; and from disposition under all laws pertaining to mineral and geothermal leasing and the sale of mineral materials. This provision of the act is subject to valid existing rights.

The California Desert Protection Act also imposes a requirement that validity of unpatented claims be determined prior to approval of any operation (sec. 509). This section also requires an analysis of the environmental consequences of mineral extraction, a determination of the estimated acquisition costs, and the submission to Congress of recommendations on whether any valid or patented claims should be acquired. The park has certified mineral examiners and is reviewing all unpatented mining claims to determine their valid existing rights and, if necessary, to conduct a validity examination to determine if a valuable, economic discovery of mineral exists on the claims.

The National Park Service also regulates mineral development on valid nonfederal oil and gas interests in accordance with 36 CFR Part 9B. This involves the review of plans, impact analysis, and permitting of the proposed extraction of oil or gas on property where the surface is held by the federal government, but the mineral rights were retained by the private party when the land was acquired.



**FIGURE 12. MINING CLAIMS**

(8 ½ X 11 B&W MAP, LANDSCAPE)

Whenever a proposed mineral development fails to meet the regulatory approval standards and no alternative development scenario is feasible, the National Park Service would seek funding to initiate acquisition of the mineral rights.

### **Cattle Grazing**

The National Park Service issued special use permits to ranchers to allow continuation of cattle grazing on the portions of eleven previous BLM grazing allotments that are now partially or wholly within the boundary of the Preserve. The allotment boundaries, animal unit months (AUM), and the rules and restrictions (season of use, supplemental feeding, forage utilization levels) are currently the same as those that existed when the Bureau of Land Management managed the Preserve lands before the passage of the California Desert Protection Act in October, 1994. Seven of the allotments have boundaries that are on federal land managed partly by the National Park Service and partly by the Bureau of Land Management.

Mojave's overall management goal is to achieve the permanent retirement of grazing. The California Desert Protection Act directs the Secretary of the Interior to make the acquisition of "base property" from willing sellers a priority above all other acquisitions in the Preserve. If ranchers notify the superintendent of their willingness to sell base property, the superintendent would immediately notify the Secretary of the Interior of the priority acquisition and request Land and Water Conservation Fund funding from Congress. The Preserve would also work with conservation organizations to purchase grazing permits and/or fee property from willing sellers. Once a grazing permit was purchased and the new owners (i.e. conservation organizations) requested retirement, it would be permanently retired. Cattle livestock grazing would no longer be an authorized use in retired areas for any reason.

When grazing permits are retired, ranching developments might eventually be removed and site restoration undertaken, subject to environmental and cultural compliance, including a determination of national register eligibility and section 106 compliance on all cultural features over 50 years old. The park would work with conservation organizations to ensure that willing seller grazing permits in desert tortoise critical habitat (figure 13) receive first consideration and that water rights are acquired with the permit.

As of April 2000, the Crescent Peaks allotment (1,276 AUMs) and the Granite Mountains allotment and permit (4,475 AUMs) have been permanently retired, resulting in a reduction of grazing in the Preserve by 15% since the Preserve was established.

While acquisitions are being pursued, and for permit holders unwilling to sell, the privilege of grazing cattle on lands in the Preserve would otherwise continue to be exercised at no more than the current level (as of October 31, 1994). Grazing would be managed over the short-term under existing BLM allotment management plans, and subject to applicable NPS regulations and policies, relevant FWS Biological Opinions, and under the following conditions:

- Additional cattle grazing using an ephemeral preference above the perennial AUMs identified below for each permit would not be considered.
- Grazing would not be allowed anywhere that perennial plant utilization exceeds 30%. Grazing shall be curtailed to protect perennial plants during severe or prolonged drought.
- Grazing use would be restricted in desert tortoise critical habitat from March 15 to June 15, if adequate precipitation has not occurred to produce ephemeral plant production of 230 lbs. per acre (air dry weight). This number may be adjusted if additional research suggests a need to do so.

- Water developments would be turned off in desert tortoise critical habitat when not in use, or to move cattle off areas not having sufficient perennial or ephemeral forage. Modifications to discourage raven use may be required.
- The Preserve would evaluate the effectiveness of using predictive models developed by USGS and other researchers. In cooperation with the BLM, USGS and park research communities, precipitation amounts and timing would be monitored in recommended locations to determine if ephemeral plant production can reasonably be expected to produce forage sufficient to allow cattle grazing. If not, cattle would be removed from desert tortoise critical habitat by March 15.
- Supplemental feeding (using hay or other feed) would not be allowed in accordance with existing Biological Opinions for desert tortoise. Use of feeding supplements (protein and/or salt) would be considered on a case-by-case basis.
- Water developments on acquired permits would be assessed for removal and the area restored to natural conditions.
- Ranching developments on retired permits would be removed unless determined to have historical or other value, and do not otherwise impact native wildlife.
- Ranching developments in wilderness would be reviewed for their historical significance and current need. If developments are determined necessary for current grazing permits, access would normally be allowed only via foot or horseback. Motorized access would be determined on a case-by-case basis using the minimal tool analysis described under the wilderness section.
- Permittees would be required to maintain all ranching developments associated with their grazing permits, including corrals, fences, pipelines, windmills, cattle guards, tanks, etc. at their expense. Abandoned property must be removed from the Preserve by the permittee. If not removed within timeframe identified, the NPS may charge the permittee for removal costs. No new ranching developments would be permitted unless it was determined to be beneficial to the flora and fauna, and not result in an increase in grazing over the levels current as of October 31, 1994.
- Until the grazing management plan is finalized, grazing fees would be charged on a per AUM basis using the same formula as the BLM, which is subject to annual review. In addition, a fee would be assessed for NPS costs in reviewing and issuing of a special use permit in accordance with NPS policy. Fees collected as reimbursement for special use permit issuance may be used to offset costs related to park management of the special use permit. Fees collected based on AUMs would be used for any purpose reasonably related to management of the grazing program, with priority given desert tortoise conservation efforts.
- Grazing permits would be reissued annually for one-year terms.
- NPS would monitor range conditions and long term plant community changes using locations and methodology currently being evaluated. Cattle may be removed from an area for an extended period if monitoring indicates that type conversion of the plant community may be occurring.
- NPS would not increase AUMs when Catellus and State lands within the permit area are acquired. However, no fencing would be required to exclude existing authorized cattle from using the acquired parcels.

Any permit that is not retired would be managed pursuant to an NPS grazing management plan. This activity plan would tier from the overall management strategy presented herein and would address specific grazing management strategies, conditions, standards, resource protection criteria, range developments, monitoring, and other program needs. An environmental assessment would be prepared on this plan.

**TABLE 4: GRAZING PERMITS AND PERENNIAL AUMs**

\*as of April 2000

<b>Permit Area</b>	<b>AUMs</b>
Clark Mountain	371
Colton Hills	2,877
Gold Valley	1,152
Round Valley	27
Kessler Springs	7,615
Lanfair Valley	11,560
Piute Valley*	0
Valley View	8,069
Valley Wells	853
<b>TOTAL</b>	<b>32,524</b>

\*Piute Valley is an ephemeral permit only. There is no perennial authorization.

Six of the grazing permits in the Mojave National Preserve have adjoining BLM allotments that are managed by the Bureau of Land Management. These are Valley View, Valley Wells, Kessler Spring, Lanfair Valley, Clark Mountain, and Piute Valley. In an amendment decision to their California Desert Conservation Area plan in late 1999 (BLM 1999), BLM agreed to retire the remnant portions of the Lanfair Valley and Piute Valley allotments if the permit is acquired and the adjoining NPS grazing permit is retired. The fate of potential remnants of the Valley View, Valley Wells, Kessler Springs, and Clark Mountain allotments are being evaluated by the BLM in a separate plan amendment EIS.

**FIGURE 13. CATTLE GRAZING PERMITS**  
(8 ½ X 11 COLOR MAP, LANDSCAPE)

Alternatives, Including the Proposed Action

Back of Figure 13. Cattle Grazing Permits  
8 ½ X 11 COLOR MAP, LANDSCAPE

## **Filming**

Filming for commercial or educational purposes may be authorized, subject to NPS policies and regulations governing such activities, including wilderness restrictions. A special use permit is required for all filming activities and a fee would be assessed. Filming activities would be subject to the same rules and regulations as other activities, including no offroad driving. Filming may not be allowed in desert tortoise critical habitat during the active periods in the spring and fall, depending on the nature of the particular film shoot. All costs associated with desert tortoise surveys and onsite monitors during filming would be borne by the permittee.

## **Visitor Services**

A concession contract to operate a small food service facility in the Kelso Depot (see appendix B) is being considered. As visitation increases, a facility may be desirable outside the Depot in another building that would offer limited emergency grocery items. No other food service facilities are being considered on park lands. The park would not develop lodging facilities for visitors on park lands, but would rely on gateway communities to provide these services.

Some level of commercial services may be sought in the Kelso Depot, Cima and Hole-in-the-Wall areas to provide compatible recreation services and equipment for visitors. Services might include backcountry jeep tours (including the Mojave Road) and horseback rides. Equipment rentals that could provide for enhanced visitor use might include bicycle and camping equipment rentals. Currently, the park issues permits annually to two licensed hunting guides who provide guiding service for bighorn sheep hunts. Commercial towing services that desire to provide service inside the park boundary would need to apply for a commercial use license and post a performance bond.

# **PLAN IMPLEMENTATION**

## **STAFFING AND BUDGET**

A park superintendent provides overall management of the park. The park is organized into five teams: Management, Administration, Maintenance, Resources Management, and Visitor Services. Staff would be supplemented and/or supported using special project funds, contracts, assistance or expertise of various other NPS parks and central offices, and/or other partners, or organizations. The park's base operating budget in fiscal year 2000 is \$3,137,000, which funds a work force of 43 positions. This work force would be supplemented by volunteers and special project and program funds distributed by the National Park Service Regional and Washington offices. Achieving our FY2000 annual performance goal targets is critically dependent on our base funding and on these additional project funds, volunteer assistance, partnerships and donations.

To fully implement the proposed action (including the actions common to all alternatives) over the 10–15 year life of the plan, assuming that the activities proposed would be undertaken and visitor use increases, an additional estimated 49 staff would be needed. This would require the addition of approximately \$4 million per year for salaries, benefits, administrative expenses (space, utilities, vehicles, etc.) and project funds. The cost of funding all proposed facilities and activities identified would be an additional \$12.2 million.

The majority of additional staff would be needed in resources management, visitor services and maintenance. However, such an increase would require an increase in administrative support as well. Approximately 14 positions are needed to fully maintain and operate the Kelso Depot seven days per week as an interpretive and visitor information facility. These positions would be interpretive rangers,

visitor use assistants, protection rangers and maintenance positions. Specialized resource positions are also necessary to carry out the resource management programs proposed. Approximately 14 additional resource positions including wildlife biologists, hydrologists, historians and archeologists, restoration specialists and land resources specialists, are critical to the successful implementation of this plan. As visitation increases over the life of this plan, additional protection rangers and maintenance positions are also necessary, beyond those at Kelso Depot, to provide essential visitor and resource protection services. As overall staff size increases at the park, critical administrative support positions would have to be added to provide clerical, purchasing, contracting, budget, hiring and computer expertise.

**TABLE 5: EXISTING AND PROPOSED STAFFING**

<b>FUNCTION</b>	<b>EXISTING STAFFING</b>	<b>ADDITIONAL STAFFING</b>
Management	<b>3.0</b>	<b>1.0</b>
Administration	<b>6.5</b>	<b>4.0</b>
Resource Management	<b>12.0</b>	<b>16.0</b>
Visitor services	<b>11.0</b>	<b>20.0</b>
Maintenance	<b>5.0</b>	<b>8.0</b>
Fire management*	<b>5.5</b>	<b>0.0</b>
<b>TOTALS</b>	<b>43.0</b>	<b>49.0</b>

*\*Includes a fire management officer, fire clerk and a seasonal fire crew of seven funded by the national Firepro account.*

#### **ESTIMATED COST OF PROPOSED FACILITY DEVELOPMENT AND MAJOR PROGRAMS**

The estimated costs associated with major new programs and proposed facility improvements, replacement, rehabilitation and new construction are provided in table 4. Construction and planning cost estimates are conceptual estimates only. These are costs of similar types of facilities and past NPS experience derived from contract data. The estimates include indirect costs added to cover such things as design services, contract supervision, and contingencies. They also take into account the cost of contracting for such services in a remote setting, seasonal constraints, labor availability, and wage rates. The costs are based on year 2000 values.

The estimated costs of acquiring private lands and mining claims under this alternative are not yet available. No comprehensive evaluation of land acquisition costs has been undertaken in accordance with NPS policy and therefore cannot be estimated at this time. The cost of acquiring property involves title searches, appraisals, relocation costs, and fair market value of the property. These specific costs would be available only on a property by property basis and would need to be determined based on current market values. An approved cost estimate for the land protection alternative selected would be prepared at a later date by the Washington office.



**TABLE 6: PROPOSED ACTION COST SUMMARY**

*These costs are in addition to those listed under the “Actions Common to All Alternatives” section.*

<b>Proposed Activity</b>	<b>Gross Construction Costs</b>	<b>Pre-Design Costs &amp; Supplemental Services</b>	<b>Design Costs</b>	<b>Total Project Costs</b>	<b>Phase</b>
<b>Desert tortoise recovery</b> actions (research, monitoring, education, displays, patrols, 6 new positions)*	-	-	-	\$490,000 annually	I
<b>Mojave tui chub recovery</b> actions (pond dredging, aquatic plant control, monitoring)	-	-	-	\$75,000 annually	I
<b>Remove feral burros</b> (approx. 700 animals @ \$800/burro); fence springs in Clark Mountain	-	-	-	\$560,000 in FY01	I
<b>Enhance cultural resource program</b> (inventory, monitoring, studies, nominations, protection, interpretation, 8 new positions)	-	-	-	\$494,000 annually	I
<b>Kelso Depot rehabilitation</b> and partial restoration (including historic landscaping, water, utilities, parking, comfort station)	\$5,400,000	\$375,000	\$540,000	\$6,315,000	I
<b>Kelso Depot interpretive exhibits</b> (plan, produce, and install museum exhibits)	\$775,000	\$50,000	\$75,000	\$900,000	I
<b>Kelso Depot</b> operation and maintenance (interpretive and visitor use staff, maintenance, protection, 14 new positions)	-	-	-	\$500,000 annually	I
<b>Soda Springs</b> self-guided interpretive trail, displays, and exhibits	\$59,000	\$3,500	\$5,000	\$67,500	II
<b>Interpretive displays/ exhibits</b> at five key roadside locations (including parking lots)	\$118,000	\$7,000	\$10,000	\$135,000	I
<b>Mid Hills campground</b> (improve accessibility to 10 campsites, add group site with vault toilet )	\$77,000	\$4,500	\$6,500	\$88,000	I
<b>New 15-site semi-primitive campground</b> with fire rings, picnic tables and pit toilet	\$83,000	\$5,000	\$7,000	\$95,000	II
<b>Informational kiosks</b> at three key entry points into Granite Mountains Natural Reserve	\$17,500	\$1,000	\$1,500	\$20,000	I
<b>Headquarters space</b> in Barstow (est. for GSA lease of 19,000 sq. ft., plus utilities and phones)	-	-	-	\$400,000 annually	I
<b>Field offices</b> in two locations to be determined through site specific plans	\$283,000	\$17,000	22,000	\$322,000	II
<b>Central maintenance facility</b> (co-located with new interagency fire center)	\$295,000	\$18,000	\$25,000	\$338,000	I
<b>Interagency fire center</b> (dormitory for 15, offices, storage space, 4 bay garage for trucks)	\$1,120,000	\$67,000	\$95,000	\$1,282,000	I
<b>Replace existing mobile homes</b> in Baker with 2 and 3 bedroom duplexes (5 units)	\$384,000	\$23,000	\$33,000	\$440,000	II
<b>Renovate and upgrade acquired housing</b> in Preserve for employee use (per NPS housing standards – 5 units)	\$265,000	\$16,000	\$23,000	\$304,000	I
<b>Construct new housing</b> at Kelso, Cima and Hole-in-the-Wall (four 2-bedroom duplexes; six 3-bedroom homes)	\$1,225,000	\$42,000	\$100,000	\$1,367,000	II
<b>Enhance maintenance program</b> (maintain new facilities, equipment and supplies, 6 positions)	-	-	-	\$400,000 annually	
<b>TOTALS</b>	<b>\$5,101,505</b>	<b>\$629,000</b>	<b>\$943,000</b>	<b>\$14,592,500</b>	

*\*These items are funded in the NPS FY01 budget, but funds have not yet been appropriated by Congress.*

**PHASES:** I — 1–5 years      II — 6–10 years      III — Spread evenly over 15 years

## **ALTERNATIVE 2: EXISTING MANAGEMENT (NO-ACTION)**

### **GENERAL DESCRIPTION**

This alternative describes the existing management approach that the National Park Service has been following since passage of the California Desert Protection Act in October 1994. These actions are typically referred to as the status quo, or the no-action alternative, since this is what would occur if the agency took no further action to adopt a general management plan. It does not mean that no management actions would be taken. Since Mojave is a relatively new unit of the national park system, no general management plan is in place. Management of the Preserve is being done in accordance with federal regulations, NPS servicewide management policies, and subject specific reference manuals and guidelines (see Policy and Planning section).

### **MANAGEMENT OF PARK RESOURCES**

#### **PHYSICAL RESOURCES**

##### **Air Quality**

The Preserve reviews and comments on adjacent project proposals as they became aware of them. No systematic monitoring of air quality is currently underway by the park, and none is planned at this time. The same requirements for compliance with federal laws, such as the Clean Air Act, as described in the proposed general management plan (alternative 1) also apply here.

##### **Viewsheds/Visual Quality**

No park programs or projects are currently in place to focus on protection of these resources. However, the park does strive to ensure their protection when considering project proposals in and out of the Preserve.

##### **Night Sky**

No formal park programs or projects are currently in place to focus on protection of these resources. However, the park does strive to ensure their protection when considering project proposals in and out of the Preserve. The NPS has provided feedback to Congress regarding our concerns about the development of a major regional airport near Primm, Nevada, and the potential effect it would have on the night sky.

##### **Natural Ambient Sound**

No baseline data currently exists on ambient noise levels and noise levels from human caused actions. However, the park does strive to ensure their protection when considering project proposals in and out of the Preserve. Mojave is participating in an interagency overflight working group comprised of land managers and military personnel, with the purpose of highlighting overflight issues and attempting to resolve them. The NPS has also provided feedback to Congress regarding our concerns about the development of a major regional airport near Primm, Nevada, and the effect it would have on the natural quiet in the Preserve.

##### **Soils**

No park programs or projects are currently in place to focus on protection or inventory of these resources.

## **Water**

Water resources in the Preserve are managed in accordance with NPS regulations and management policies. Basic information on the location of seeps and springs has been gathered, but no inventory and monitoring program has been adopted. Regular monitoring data is received from Viceroy mine for Piute Springs. Viceroy is required to monitor water quantity to ensure no effect from their groundwater pumping activities to the north of the springs. The park is actively participating in the review and monitoring of a proposed large-scale underground water storage reservoir south of the Preserve that is being proposed by Cadiz. This project could have major implications on the groundwater supply under the Preserve, and have unknown effects on surface waters.

## **Floodplain and Wetland Areas**

Management of floodplain and wetland areas is subject to the provisions of Executive Order 11988, "Floodplain Management" (42 USC 4321), Executive Order 11990, "Protection of Wetlands" (42 USC 4321), and the Rivers and Harbors Act (33 USC 401 et. seq.), and section 404 of the Clean Water Act (33 USC 1344). No inventory of wetlands has been conducted.

## **Water Rights**

Records at the California State Water Resources Control Board have been searched to identify outstanding water rights (see appendix C: *Land Protection Plan* for a list). Mojave has converted water rights that were held in the name of the BLM to NPS records. Several water rights were purchased as part of the acquisition of the Granite Mountains grazing permit by the National Park Foundation. These rights will be converted to conservation use and are no longer available for appropriation as all future users would be junior to the federal right.

The discussion in alternative 1, the proposed general management plan, relative to requirements under the law, regulations and policies is also applicable in this alternative.

## **Paleontological Resources**

The park has initiated efforts to gather information on known paleontological sites and create a database of such sites. Scientific research would continue to be conducted by entities other than the National Park Service consists of random patrols of the backcountry.

## **Geological Resources**

The park has several geologists on staff working on mining issues primarily. As time permits, these staff would devote some of their time and expertise to the establishment of a geological inventory and monitoring program. Existing published information on park geology is being gathered. The park has worked with the US Geological Survey to create a geologic overview website for the Preserve for public and agency use.

## **Caves**

The park has initiated efforts to gather information on known cave resources and create a database of such sites. Scientific research would continue to be conducted by entities other than the National Park Service. Resource protection consists of random patrols of the backcountry.

## **BIOLOGICAL RESOURCES**

The biological resources of the Preserve are managed in accordance with appropriate federal laws, regulations and NPS management policies. No comprehensive management programs have been

developed. Efforts have focused on gathering existing published information. Mojave is currently developing an inventorying and monitoring program in conjunction with the other desert parks. However, the details of this program are not yet available.

### **Flora**

A checklist of plants that are known to occur in the Preserve has been developed using published information and consulting with botanists who have worked in the area. The checklist identifies 803 species in 85 families occurring in the park. A general vegetation map of the park has been generated using digital data from UC Santa Barbara. A more detailed vegetation map of the Mojave Desert is nearing completion by the Biological Resources Division of USGS, which will include mapping of sensitive habitats identified below.

### **Fauna**

A generalized list of fauna in the Preserve is available from existing published information and consultation with biologists working in the area. BLM (1988) reported 35 habitat types, supporting about 300 species of wildlife, including 36 species of reptiles, 200 birds and 47 mammals. Insects are not well documented. Currently, the NPS has no active wildlife program; however, a wildlife biologist is being hired in fiscal 2000. The California Department of Fish and Game routinely conducts bighorn sheep counts and monitors the mule deer population. Researchers at Soda Springs and Granite Mountains routinely conduct a variety of wildlife investigations.

### **Sensitive Species and Habitats**

A preliminary list of species of special concern in the Preserve is included in appendix D. The National Park Service would continue to gather information on the distribution, abundance, and threats related to these species through cooperative efforts with universities. These species would be considered in all compliance actions and steps taken to protect habitat to ensure their preservation. Mojave is currently developing an inventorying and monitoring program in conjunction with the other desert parks. However, the details of this program are not yet available.

### **Desert Tortoise**

The desert tortoise and its critical habitat are managed indirectly through other activities and resources such as hunting, grazing, burros, and other land uses. Site specific surveys have been conducted for project proposals including, the AT&T cable removal project, the Cima Cinder mine, and the Union Pacific double tracking and digital cable projects. Special use permits and environmental compliance activities typically include stipulations for the protection of the tortoise. U.S. Fish & Wildlife Service has issued a programmatic biological opinion to Mojave for small project activities in desert tortoise habitat. This agreement allows certain specified activities and a minimal amount of disturbance to occur without the need to formally consult with the U.S. Fish & Wildlife Service on each action. Two biological opinions have also been issued by USFWS for cattle grazing in desert tortoise habitat. Consultation with the U.S. Fish & Wildlife Service on other activities on park lands that may affect the desert tortoise and other listed species occurs for each activity. Monitoring locations and frequency are being developed in consultation with tortoise biologists, USFWS and BLM, and funding to support an interagency, desert-wide monitoring team has been requested.

Mojave has hired a wildlife biologist to oversee wildlife issues. This position would focus initially on desert tortoise recovery actions. Mojave is also targeted to receive an increase in base funding in FY2001 to implement tortoise monitoring, education, protection and begin work on recovery actions.

### **Mohave Tui Chub**

No changes in the management of the Mohave tui chub are proposed. The artificial pond population at Soda Springs is maintained in cooperation with the U.S. Fish and Wildlife Service, the California Department of Fish and Game, and the Soda Springs Desert Study Center as one of a few artificial populations of the species. A genetics study completed in 1997 determined that the chub was indeed a distinct species, not a hybrid with the exotic arroyo chub.

### **Desert Bighorn Sheep**

Native populations of Nelson's bighorn sheep (*Ovis canadensis nelsonii*) are found in most of the mountainous terrain of the park, with population estimates as of 1994 at between 425 and 675 or more animals (Torres, S. G. et al. 1994). The population is not listed by USFWS or the state, but is sensitive due to the fragmentation of habitat throughout its range. Mojave National Preserve is also one of the few places in California where bighorn sheep hunting is allowed. Limited hunting of bighorn sheep began in 1987 (BLM 1988). A limited number of permits to hunt bighorn sheep are issued each year by CDF&G through a lottery system. Sheep populations are monitored regularly by CDF&G and the park has assisted with these efforts.

### **Coastal Sage**

The ongoing vegetation mapping effort by the USGS is mapping the sensitive habitat areas. No special protective measures or needs have been identified for this community type.

### **White Fir Populations**

BLM staff previously inventoried these stands and the ongoing vegetation mapping effort by the USGS is mapping the sensitive habitat areas. Fire has been identified as a potential threat to the continued existence of this habitat type.

### **Joshua Tree Woodlands**

The Joshua tree woodland covering the dome and surrounding areas is considered to be the largest and most dense stand within the tree's range, covering in excess of 150 square miles and probably containing more than a million trees. No ongoing research or monitoring is currently underway. Grazing and fire are thought to be potential threats, but research is needed to determine specific management concerns.

### **Other Unusual Plant Communities**

Other plant communities have also been previously identified by the BLM as "unusual," meaning they may be sensitive particularly sensitive to disturbance: Calcicolous Scrub, Sagebrush Scrub, Shadscale Scrub, Desert Grassland, Kelso Dunes, Mojave Yucca, Succulents (Cactus gardens), Riparian, Mesquite, and Mesquite. See the proposed general management plan, alternative one, for a discussion of their occurrence. No special protective measures have been identified or monitoring programs have been initiated.

### **INTRODUCED SPECIES**

Sixty nonnative species of plants are known to occur in the Preserve. Occurrences of nonnative wildlife and insects have not been researched thoroughly. The most invasive species are addressed

below. Introduced species are managed in accordance with NPS management. This guidance calls for aggressive removal of invasive species, and management programs to prevent new invasions.

## **Burros**

The NPS is currently managing the Preserve for BLM's prescribed herd management levels of 130 animals. The NPS conducted a burro census in 1996 that indicated an estimated 1,400 burros were present in Mojave National Preserve (see "Affected Environment" section for current estimates). As such, Mojave is conducting a current and active capture and removal program that is described below.

### **Objectives**

- Reduce the burro herd in the Mojave National Preserve to 130 animals, using water trapping, horseback wrangling, helicopter-assisted roping and trapping, and net gunning.
- Remove and place all captured burros through several possible sources: 1) The Fund for Animals' Black Beauty Ranch, 2) a private contractor, 3) the Bureau of Land Management's adoption program.

### **Capture**

Three capture methods are currently employed for Mojave's burro program: water trapping, horseback wrangling, and helicopter-assisted roping and trapping. A phased approach is being employed in implementing these methods, where water trapping is considered the easiest and least expensive means of capture, horseback wrangling more difficult and expensive, and helicopter methods the most difficult and expensive. The more difficult capture methods, however, are also more effective at capturing elusive, remote animals. It is anticipated that as water trapping becomes less effective, horseback wrangling and helicopter methods will become the focus of capture operations.

The capture methods are described in detail below. The number of burros that are removed with each method is subject to modification as the program progresses and various capture methods prove more or less effective than anticipated.

- 1) Water Trapping. Burros are habituated to drinking at certain cattle corrals and developed waters in the desert. During water trapping, the animals enter a corral through a one-way gate known as a "finger trap" or "trigger" to obtain water, and cannot exit. Only existing corrals or previously developed water sources are used. Temporary corrals will be set up around those developed water sources planned for trapping where no corral exists. Temporary corrals are made of 6-rail livestock panels. No trapping is or will be conducted at springs, wetlands, riparian areas, or other sensitive environments. All trapping locations are previously heavily impacted by livestock and feral burro use.

Traps are checked for animals every day during water trapping operations. Trapped animals are loaded on a trailer and hauled to a central holding corral, where they await shipment out of Mojave. Holding corrals, like the trapping corrals, are located on ground that is previously heavily disturbed by livestock use. Only existing corrals are used. Burros wait in the holding corral no more than five days before shipment out of the park. Whether in the trap or in the holding corral, burros are given constant access to water and are provided adequate feed.

Water trapping has been highly successful at Mojave, resulting in the capture of approximately 1,841 burros during three separate trapping seasons. Experience in other locations suggests that water trapping is most effective in the summer, when the animals are more thirsty and more willing to enter a trap to get a drink, and when there are fewer natural water sources available. Based on the effectiveness of the water trapping program to date,

however, Mojave is attempting to water trap burros on a year-round basis. If water trapping becomes ineffective in the spring, fall, or winter, trapping during these seasons will be halted. Additionally, it is anticipated that as the program progresses, even warm-season water trapping will become less successful, because the burro herd will be reduced to only those animals that drink at natural sources.

- 2) Horseback Wrangling. As burro numbers are reduced, water trapping will become less effective. One alternative is horseback wrangling, where riders capture burros by driving them into corrals or by roping the animals and leading them into corrals. Efforts will be made to use existing corrals or set up temporary corrals (using six-rail livestock panels) in previously disturbed areas. Like water trapping, burros will be moved to a central holding corral where they will await removal from the park. They will be held no more than five days, will have free access to water, and will receive regular food.

It is anticipated that horseback wrangling will be used throughout the life of the program to capture animals that cannot be water trapped and are not concentrated enough to warrant the expense of helicopter capture. Costs per animal capture are expected to increase over the life of the program as burros become harder to reach due to terrain factors and distance from roads.

- 3) Helicopter-Assisted Roping and Trapping. During helicopter-assisted trapping, a helicopter is used to locate burros and herd them into a funnel trap. Wranglers wait until the burros enter the mouth of the funnel trap and then close in behind the animals, herding them into the corral. During helicopter-assisted roping, a helicopter is used to herd the animals to a capture site where wranglers are waiting. The wranglers rope the animals and lead them to a corral. Like the other two methods, captured burros will be placed in a temporary holding corral where they will be cared for and await removal from Mojave.

Helicopter-assisted roping and trapping will be employed to capture burros in those areas where water trapping and horseback wrangling are not feasible or effective, and where there is a high enough concentration of burros that helicopter methods will prove cost effective. Costs per animal capture are expected to increase over the life of the program as burro numbers are reduced. In FY2000, Mojave initiated helicopter assisted roundups in the Lava Beds and Granite Mountains, resulting in the capture of over 513 burros by this technique.

Mojave currently utilizes three placement sources for captured burros. The market for burros in the United States is limited, and no single placement source is capable of absorbing all the burros that must be removed. Cost also factors into decisions on placement. The three placement sources are:

- 1) The Fund for Animals' Black Beauty Ranch. The Black Beauty Ranch, located in East Texas and owned by the late Cleveland Amory's Fund for Animals, is a haven for unwanted animals. In a signed general agreement with NPS, the Fund has agreed to accept up to 300 Mojave burros per year at the Black Beauty Ranch. Under the terms of the agreement, the Fund takes the animals free of charge. The NPS must finance shipping the animals to Texas, plus all necessary veterinarian check-ups and blood work. Mojave employs the services of a contractor for the shipping and veterinarian services.

Upon arrival at the Black Beauty Ranch, the burros become the property of the Fund for Animals, and they are adopted to interested parties or live out their lives on the ranch. In 1998, 100 burros were successfully sent to the Black Beauty Ranch under this agreement. In 1999, 300 animals were placed there.

- 2) Private Contractor. In 1998, Mojave contracted with a private company to remove and market burros for NPS. The company picked up the burros from the park, transported the animals to their facilities, and sold them to private entities. Their market included selling burros for pets, breeding, pack stock, and other recreational purposes. Under contract stipulations, no burros were sold for slaughter, and the company made available to the NPS records indicating where each burro was sold. The program with this company has been highly successful, resulting the placement of hundreds of burros. Mojave will continue to use this contract to place burros in the future.
- 3) Bureau of Land Management Wild Horse and Burro Adoption Program. The BLM has a well-established adoption program for horses and burros removed from the wild. During 1997, Mojave placed 600 burros through the BLM program. Another 100 animals were placed with BLM in 1999 and 200 in 2000. Due to a saturated market, fiscal considerations, and BLM's interpretation of the 1971 Wild and Free-Roaming Horse and Burro Act, BLM's ability to take burros from Mojave is limited, but this option will be used in the future where appropriate.

Burro herd migrations, size of the park, and uncertainties associated with the effectiveness of the various capture methods make predictions on the timing of burro capture very difficult. Generally, horseback wrangling and helicopter-assisted capture will be conducted during the warmer months when burro herds are concentrated around water sources. Water trapping, which is assumed to be more effective in the summer, will nevertheless be attempted year-round to test the efficacy of a four-season operation.

Predictions about capture locations are also difficult to make. Mojave is a large area with few geographic boundaries that can inhibit burro migration within the park. The 1996 survey (National Park Service, 1997) and burro monitoring over the last three years by park staff, suggest that burro herds are concentrated in the following general locations: Granite Mountains, Providence Mountains/Clipper Valley, Woods/Hackberry Mountains, New York Mountains, Ivanpah Mountains, Cima Dome, Cinder Cones, and Clark Mountain. The combined area of these locations totals over one million acres. Predicting burro herd locations within these general geographic areas is problematic. Decisions on general capture areas will be based on monitoring observations taken approximately two weeks prior to capture operations.

Decisions regarding specific trap and holding corral locations will be made immediately after the determination of the general capture locations. The specific number of livestock corrals in Mojave that could serve as potential traps or holding facilities is unknown, but may number in the hundreds. Potential holding facilities exist within a few miles of almost all capture locations.

A BLM Herd Management Area lies adjacent to Clark Mountain, with no natural or man-made barriers to prevent burros from entering this satellite unit of the Preserve. Under existing management, Mojave has the option of removing burros from the Clark Mountain unit. This is not occurring, however, due to the easy access that burros have to this area from BLM land.

Further detail on Mojave's current burro program can be found in the *Action Plan for the Removal of Feral Burros* (NPS, 1998).

### **Tamarisk**

Efforts would continue to identify areas where individuals of salt cedar (*Tamarisk ramossissima*) are gaining a foothold. Successful control of tamarisk has been demonstrated in numerous projects throughout the southwest. Only authorized herbicides are used in tamarisk control efforts. Such herbicides are non-persistent, nontoxic to aquatic life and are used in accordance with accepted



management practices and proper dosages. Any use of poisons or other chemical agents on federal lands within the Preserve, including use by the park or by permittees, requires review and permission under the NPS Integrated Pest Management program.

Athel tamarisk trees (*Tamarisk aphylla*), such as those planted along the Union Pacific railroad corridor for protection of the tracks from blowing sand, do not spread easily and are not considered a threat. The species planted, though nonnative, is not the weedy one that spreads voraciously. There has been no documentation or observations of this species of tamarisk developing from seed dispersal in this area.

Tamarisk trees at Kelso depot are being evaluated in the development of the historic landscaping plan for the area, as a component of the Depot restoration project currently underway. They may be retained if necessary if determined to be part of the historic landscaping, or replaced if suitable alternatives are available.

### **Mule Deer**

The California Department of Fish and Game introduced the Rocky Mountain mule deer (*Odocoileus hemionus hemionus*) into the New York and Providence mountains in 1948 from Arizona (Dasmann 1968). Nine bucks and 31 does were released. The first authorized hunt of this population was in 1955. See table 18 for buck kill numbers. The population has remained relatively stable since the first introduction. No inventory or monitoring of the population is occurring by park staff. The department may be conducting casual population estimates from vehicle surveys and hunt statistics.

### **Chukar**

The chukar (*Alectoris graeca*), an upland game bird popular among hunters, was first introduced into California (from India) in 1932 (Mallette c.1970). Between 1932 and 1955, more than 52,000 birds were released by the California Department of Fish and Game (Mallette c.1970). The birds prefer rocky open hills and flats. Sightings have been reported from below sea level to above 12,000 feet in the White Mountains and Sierra Nevada. The animal is abundant in parts of the Preserve. No inventory or monitoring of the population is occurring by park staff. CDF&G may be conducting casual population estimates from vehicle surveys and hunt statistics.

No actions are being taken at this time to remove this exotic species. The NPS would not allow management actions by CDF&G or organized groups that would specifically promote increased populations of this non-native species.

## **CULTURAL RESOURCES**

Many of the agency responsibilities and mandates for cultural resources are addressed in the section "Actions Common to All Alternatives."

### **Program Goals**

Cultural resource management is focused on NPS compliance efforts to meet the requirements of the National Historic Preservation Act and the National Park Service's *Cultural Resource Management Guideline*, release no. 4, September 23, 1994. Cultural resource management programs include: (1) collecting data and inventorying of archeological sites, ethnographic resources, and historic properties; (2) preparing and updating the list of classified structures; and (3) preparing cultural resource studies, and (4) inventorying and nominating significant cultural landscapes to the National Register. Limited NPS protection of archeological sites and ruins is occurring through random patrols. Limited

monitoring of resources by ranger patrols would continue, with remedial actions focused primarily on sites in high use areas.

### **Archeology**

In 1999 archeological site investigations were conducted at Soda Springs, section of North and south Kelbaker, Cima, Ivanpah, and Essex roads and near Goffs. In 2000 archeological monitoring was conducted in support of the mining validity program and a testing program is anticipated at Kelso Depot.

## **FACILITIES AND DEVELOPMENT**

### **INFORMATION CENTERS**

#### **Information Centers and Sources**

The existing NPS visitor contact centers at Baker and Needles serve as the initial visitor information contact points, providing the public with information on desert travel and recreation opportunities. The Hole-in-the-Wall visitor information contact center would be currently the only NPS facility inside the Preserve with a seasonal staff presence. Staffing would continue on a seasonal basis and as NPS staff or volunteers were available.

The park provides basic visitor use and park resource information via the National Park Service website ([www.nps.gov/moja](http://www.nps.gov/moja)). A desert-wide interagency page has also been developed to provide visitor and resource information ([www.californiadesert.gov](http://www.californiadesert.gov)).

### **INTERPRETIVE FACILITIES**

There is no overall interpretive plan in place; however, initial efforts to produce a comprehensive interpretive plan have begun. Interpretation programs operate in and out of information centers in Baker, Needles and Hole-in-the-Wall. Ranger-led walks and talks are provided at various locations in the Preserve.

#### **Kelso Depot**

No funding is currently available for the rehabilitation or stabilization of the depot. The park would seek other funding to stabilize Kelso Depot to protect it from further deterioration and to provide fire and security protection. However, the interior of the depot would not be opened for public use. Interpretation of the depot is currently by exterior interpretive panels. This would continue and perhaps be enhanced. Historic landscaping is mostly gone, but may be partially rehabilitated if funding is available. A comfort station is being planned to replace the existing portable toilets. Parking occurs around the depot on unimproved gravel. See figure 13 for a schematic of the existing landscape around the depot.

**FIGURE 14. KELSO DEPOT EXISTING SITE CONDITIONS**

(11 X 17 color, landscape)

Figure 14. Kelso Depot Existing Site Conditions  
(11 X 17 color, landscape)

### **Soda Springs (Zzyzx)**

In 2000, the NPS replaced an existing interpretive shade structure, comfort station and parking lot to remove structurally unsafe and non-functional facilities. These facilities would serve as the focal point for visitors coming to Zzyzx for day use. A self-guided trail and some interpretive panels provide some basic information on some aspects of the history and current use. The park is considering replacement of the interpretive panels and improvements to the self-guided trail.

### **Hole-in-the-Wall**

Interpretive facilities are limited to basic information and displays in the existing visitor information center. Maps and book sales are also available. Seasonal staff or volunteers open the building during the spring, summer and fall. A couple of existing interpretive panels are also in place at the top of the Rings Trail.

### **Signing and Orientation**

Existing signs are being evaluated for retention, modification, or removal. Some new signs have been added, and most outdated and worn signs have been replaced. Entrance signs have been constructed at all the major paved entrances, along with information panels to provide basic visitor information and orientation.

A park newspaper is produced approximately once a year to provide visitors with basic orientation information, current resource issues, and other data relevant to a visit. Information sheets on camping, hunting and other specific activities are also available. A generalized map of the Preserve, showing major roads, wilderness, and points of interest, was produced in conjunction with AAA, and provides a useful guide for most visitors. More detailed topographic maps of the Preserve have been produced by private vendors and are available for sale at the information centers. The NPS also produces a free color brochure and map for each park unit, following a recognizable format. This park brochure is under development and should be available by the end of the year.

### **Wayside Exhibits**

Planning is underway and would continue for roadside pullouts with information displays to orient visitors and provide an overview of major features, including notes on travel safety. Existing interpretive panels at Kelso Dunes, Rings Trail, Teutonia, Zzyzx, Ft. Piute and Kelso Depot, and Rock Springs are being replaced.

### **DEVELOPED CAMPGROUNDS**

Mid Hills and Hole-in-the-Wall campgrounds provide a total of 61 campsites for a variety of recreational vehicle (RV) and tent camping opportunities. The group area at Hole-in-the-Wall offers facilities for equestrian use. Improvements have been completed at both campgrounds to replace or upgrade restrooms, campsites, and the water systems. Both campgrounds are open year round and no reservations are required. Hole-in-the-Wall campground has a significant level of accessibility for visitors with disabilities. No expansion of developed campgrounds or creation of new ones is planned.

The State also operates a small, developed campground at Mitchell Caverns with 6 spaces.

## **RESEARCH AND EDUCATION CENTERS**

### **Soda Springs Desert Study Center**

The land and buildings are owned by the National Park Service, but managed by California State University (CSU). A cooperative agreement for the operation and maintenance of the facilities is being developed. CSU has also constructed new buildings and invested funds over the last twenty years in maintaining existing buildings. A nomination form is being prepared to nominate the Soda Springs Historical District to the National Register of Historic Places.

By virtue of its inclusion within the Mojave National Preserve, and as specified in law, the area must be managed consistent with federal laws and NPS policy and regulations. Many historic structures are located at this desert oasis, which has served as a desert research and educational facility for over twenty years. Historic structures, cultural landscapes, and other cultural resources must be maintained in accordance with the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. The NPS and the public could benefit from a continued partnership with CSU to provide for continued maintenance and security of the facilities, offering of educational activities on desert resources for the public, and to attract scientific interests to pursue research in the Preserve.

### **Granite Mountains Natural Reserve**

Section 513 of the CDPA designated the Granite Mountains Natural Reserve (see figure 8) and called for a cooperative management agreement between the National Park Service and California State University to manage facilities and provide desert research and education. The Granite Mountains Natural Reserve is one of a series of Reserves managed by the University of California throughout California. The purpose of these reserves is to manage, protect and preserve sites that are undisturbed examples of California's extraordinary and diverse habitats for long term scientific research and for public education. On federal lands, this State purpose must be balanced with the park purpose and mission of protecting resources for visitor enjoyment.

The 9,000-acre Reserve lies in the Granite Mountains in the southeast corner of Mojave National Preserve. The University of California owns fee title to approximately 2,200 acres of the Reserve, while most of the remainder is owned by the federal government and managed by the NPS. A 20-acre patented mining claim is also privately held inside the Reserve. Housing, classroom facilities, a library and office space was constructed and are maintained by the university on State land. No facilities are located on federal land. The University of California has sole authority for the use and maintenance of their facilities.

## **PARK SUPPORT FACILITIES**

The National Park Service has located some facilities outside the Preserve, such as the headquarters building in Barstow; an office building, employee housing and an information center in Baker; and an information center in Needles. Additional facilities would continue to be sought for field offices and employee housing.

### **Headquarters**

Headquarters would continue to be located at Barstow. Space is provided for the superintendent's staff, administration, visitor services, resource management, and other central administrative offices. In addition, the NPS provides space for U.S. Fish and Wildlife and Mojave Desert Ecosystem staff via cooperative agreements.

## **Field Offices**

Currently, the only field office space is provided in a building constructed in Baker in 1997, in a small space in the back of the Hole-in-the-Wall information center, and an office in an employee residence in Kelso. The park would continue to pursue funding to construct or lease field office space in the Cima, Kelso, Hole-in-the-Wall and Lanfair Valley areas.

## **Maintenance Facilities**

The maintenance operation is overseen from Barstow, with field offices in Baker and Hole-in-the-Wall. The Baker facility provides the main field office and a small shop. Improvements would continue to be made to this facility to increase its capability to provide maintenance and other services. The Hole-in-the-Wall operation would be improved somewhat, but would likely remain a secondary support facility. Opportunities to co-locate a maintenance shop with a new interagency fire center would be pursued.

## **Interagency Fire Center**

A modular building at Hole-in-the-Wall currently provides cramped dormitory style housing for the seasonal fire crew, with a separate garage for two engines. A fenced yard, above-ground fuel tanks and a small storage building complete the existing facilities. The existing modular building is inadequate for the crew size and the garage for parking fire trucks is too small to allow the doors to be closed completely. Because of the poor condition of facilities at Hole-in-the-Wall, replacement of the existing structure is being considered. A separate development concept plan for the entire Hole-in-the-Wall area is being developed. This plan would consider the appropriateness of the location of the fire center intermingled with visitor facilities, and look at alternative locations. A value analysis process was conducted to consider the advantages of various building designs and site locations. Construction funding to replace the existing structure is available in FY00.

## **Employee Housing**

At the present, a one bedroom housing unit and a studio apartment are available in the Hole-in-the-Wall area. In addition, the park leases a mobile home in Kelso from Union Pacific railroad to serve as housing and office space for a ranger position. Five mobile homes are also available for employee housing in the Baker compound. The National Park Service would replace the existing double-wide trailers with constructed units as funding is available. NPS employee housing would not be provided in Needles or Barstow, instead employees would have to find housing on the open market.

If existing homes in the Preserve are acquired by government purchase or donation, the park would evaluate the historical value, management, and aesthetic needs, and the cost effectiveness of bringing these homes up to current standards. Standards and guidelines would include current NPS housing guidelines, building codes, historic preservation guidelines and standards, accessibility and energy conservation. Housing might be renovated, replaced, stabilized or removed as appropriate. The park would evaluate the cost of upgrading homes to meet NPS housing requirements, and where conditions warranted, some houses might be adapted for employee housing. Before upgrading existing acquired homes or constructing new housing for employees, the Preserve would evaluate the location of the housing and make a determination about whether private housing elsewhere within a one-hour drive could serve the same need. The total housing units would be the minimum necessary to meet the mission of the Preserve.

## **ACCESS AND CIRCULATION**

### **Roads**

No changes would be made to the existing roads. Some limited upgrading of heavily used roads may be undertaken as funds permitted. For example, crushed rock might be added to roads, as was done recently on the Kelso Dunes and Soda Springs access roads. Vehicle use in the Preserve is limited to street legal vehicles and no offroad driving is permitted. Driving in desert washes is not permitted unless they are shown as a developed road on park maps. These routes are usually easily identified on the ground, even after storms, due to the distinctive lack of vegetation from years of use forming a road alignment. Tracks caused from one or two vehicle passes do not establish a road.

#### **Paved Roads**

The County of San Bernardino would continue to maintain the paved roads throughout the Preserve. A cooperative agreement is being developed to delineate maintenance standards and specifications. An inventory of these roads would be included in the cooperative agreement. In accordance with NPS regulations at 36 CFR 4.2.1 and to assure the safety of visitors and protection of park resources, the speed limit on all paved roads may be reduced to 45 mph in areas or during periods where such a reduction is warranted.

#### **Maintained Dirt Roads**

The County of San Bernardino would continue to maintain the graded dirt Cedar Canyon, Black Canyon, and Lanfair Valley roads. The National Park Service would continue to maintain graded dirt access roads to the Zzyzx, Kelso Dunes, and Wild Horse Canyon road. The cooperative agreement with the county would identify limited existing sites for equipment and materials storage, and road widths.

#### **Backcountry Roads**

High-clearance and four-wheel-drive (4WD) backcountry roads are not maintained by the Preserve or the county. However, emergency repairs might be undertaken by the Preserve staff following flash floods. Some private landowners reside in the Preserve and may do limited maintenance on certain roads such as dragging the road or using a small tractor. Where these roads cross federal land, the NPS would require a permit for such routine maintenance. This permit is necessary to assure that no tortoise are harmed by the activity and the maintenance is done in accordance with NPS standards. Backcountry users that encounter washed out roads during their visit may make emergency repairs using hand tools, if required for them to exit an area.

Some existing backcountry roads were included in wilderness areas by Congress and are no longer open to motorized or mechanized use. These routes are posted with carsonite or wooden signs and may not be used by motorized vehicles of any kind, or by bicycles. The map in the back pocket shows the routes open to mechanized and motorized use.

#### **Mojave Road**

The Mojave Road is open for street legal vehicles, mountain bikes, equestrians, and hikers, with limited restrictions on the type of use it receives. Motorcycles are allowed on the road, but all vehicles must be street legal. Camping along the Mojave Road is managed under the restrictions of the Preserve's interim management policies, which cover roadside camping, campfires, and other related activities. Business permits may be granted for appropriate commercial tours on the Mojave Road.



Special use permits are required for large groups and organized events anywhere in the Preserve (see groups and organized events section). The NPS does not maintain Mojave Road, but may seek agreements with private groups for volunteer maintenance. No directional signs or interpretive panels would be installed along the Mojave Road.

### Trails

Existing roads that are now included within wilderness areas are closed to use by mechanized vehicles, but are open for hiking and equestrian use, including use by wheelchairs in accordance with NPS policy. These roads would be evaluated for restoration or conversion to single track hiking trails. The Preserve received some funding in FY00 to convert one of these wilderness routes to a trail. This project is undergoing separate planning and compliance.

### RIGHTS-OF-WAY AND EASEMENTS

There are approximately 125 rights-of-way and/or easements within the Preserve. Some of these are entirely within the boundary, while others enter the Preserve and may terminate within or pass through the Preserve. Some of the existing rights-of-way and/or easements are listed below.

<b>Right-of-Way/Easement</b>	<b>Purpose</b>
AT&T	Underground communications cable
Southern California Edison*	Electric transmission line, aerial
Southern California Gas Co.*	Natural Gas pipeline
Cal-Nev	Oil pipeline
Molycorp*	Waste water pipeline
Pacific Bell	Communication site
U. S. Sprint	Telephone line
Union Pacific	Railroad
Southern California Gas Co.	Petroleum pumping station

*\*Congress provided specific direction in section 511 of the California Desert Protection Act on these rights-of-way/easements.*

At the present time the BLM collects and retains all annual fees/rentals associated with rights-of-ways/easements in the Preserve.

### Railroads

The Union Pacific (UP) railroad line traverses the center of the Preserve for 91 miles, from Nipton, through Cima and Kelso, and to the southern edge of Soda Lake. This railroad right-of-way (ROW) is a 200 foot wide corridor that was granted by Congress in 1875. The railroad operates as a major regional freight corridor to southern California, servicing as many as 30 freight trains per day. Union Pacific also owns land in the Kelso Depot area and houses a small crew there in several mobile homes.

Passenger train service through the Preserve was discontinued by Amtrak in 1997. UP is currently pursuing permits to construct a second set of tracks parallel to the existing set, extending from Kelso Depot to Cima. This project would allow the return of passenger service from Los Angeles to Las Vegas, provided by Amtrak. Review of this double-tracking proposed is occurring under separate compliance.

Southern Pacific also operates a major regional railroad line that parallels the southern boundary of the Preserve in some locations. East of Goffs the railroad ROW forms the Preserve boundary, with the tracks being outside the Preserve. This railroad does not enter the Preserve, but operations adjacent to the Preserve may impact park resources.

### **Roads**

Most of the roads in the Preserve were constructed without rights-of-ways or easements being granted. However, their existence and use over many years may have established a “prescriptive easement.” The County of San Bernardino contends that all established roads in the Preserve are valid RS-2477 rights-of-ways. RS-2477 assertion determinations are not planning decisions. See section on Actions Considered but Rejected for an explanation of the status of RS-2477 assertion claims. A right-of-way asserted under RS-2477 is not automatically assumed to be valid. Regardless of whether a party can successfully assert a valid claim to a right-of-way across national park land, the NPS retains the authority to regulate use of an RS 2477 right-of-way. *See U.S. v. Vogler*, 859 F.2d 638, 642 (9<sup>th</sup> Cir. 1988).

### **WILDLIFE GUZZLERS**

Approximately 130 small game and six big game guzzlers were installed throughout the Preserve by agencies and interest groups over the last 60 years. The artificial waters were installed to enhance or replace natural waters for wildlife use. Maintenance of existing guzzlers in Mojave National Preserve is provided for with the superintendent’s approval. Motorized access to guzzlers in wilderness for the purpose of maintenance or replenishment of water is reviewed individually.

### **RANCHING DEVELOPMENTS**

Developments associated with ranching operations have been installed throughout the Preserve over the last 100 or more years. Hundreds of miles of barbed wire fences and water pipelines, as well as dozens of cattle guards, windmills, water tanks, troughs, corrals, earthen reservoirs, houses, barns, sheds and other structures exist to support the ranching operations. Maintenance of most of these facilities is the responsibility of the rancher who benefits from their use. Some fences, water tanks, pipelines and windmills are the responsibility of the NPS, the County or Caltrans (along I-15 and I-40). During the grazing management plan development, specific detailed lists and maps of the locations, ownership and maintenance responsibility of all these developments would be prepared.

Water is necessary for livestock grazing on NPS lands and these waters are controlled by the rancher to facilitate movement of livestock on and off rangelands. Routine maintenance of existing ranching developments in Mojave National Preserve is allowed. Replacement or major repair is provided for with the superintendent’s approval. Motorized access to sites in wilderness for the purpose of maintenance or replenishment of water is reviewed individually.

## USE OF THE PRESERVE

### **RECREATIONAL ACTIVITIES**

It is recognized that recreational trends continue to change and that specific, detailed directions on certain activities need to be placed under a guiding statement providing overall direction. *NPS Management Policy on Recreational Activities* (section 8) provides guidance for determining the appropriateness of recreational activities in units of the national park system.

Unless the activity is mandated by statute, the National Park Service would not allow a recreational activity within a park if it would involve any of the following results:

- inconsistency with the park's enabling legislation or proclamation or derogation of the values or purposes for which the park was established
- unacceptable impacts on visitor enjoyment due to interference or conflict with other visitor use activities
- consumptive use of park resources (does not apply to certain traditional activities specifically authorized by NPS general regulations)
- unacceptable impacts on park resources or natural processes
- unacceptable levels of danger to the welfare or safety of the public, including participants

*NPS Management Policy* also states that each unit of the national park system is responsible for determining which recreational activities are appropriate or inappropriate, based upon the unit's purposes and values (see the purpose and significance statements for Mojave National Preserve).

### **Rock Climbing**

Climbing activities would continue to be managed under NPS policy and regulations.

This alternative is the same as the proposed action, with the following exceptions:

- Power drill usage is allowed in all non-wilderness zones without a special use permit.
- Climbing at Clark Mountain is not currently limited due to bighorn sheep activity.
- The entire Preserve is open to climbing and fixed anchors.

### **Hunting, Fishing, and Trapping**

Hunting, fishing, and trapping are allowed in accordance with the CDPA under CDF&G hunting regulations. Trapping within the Preserve follows California's 1998 Proposition 4 to the extent that it does not conflict with federal wildlife management. In very limited circumstances the superintendent would allow trapping by designated individuals to remove (trap or shoot) animals that are a hazard to visitors or park resources under the authority provided by 16.U.S.C 3.

The collection of non-game birds, reptiles, amphibians, and invertebrates is permitted under NPS regulations (CFR 36 2.2 b.4 & 2.5.a) only with a valid NPS scientific collection permit. Plinking (random target shooting) is not permitted.

### **Hiking**

Hiking is allowed throughout the Preserve, both on developed trails and cross-country. Groups and organized events need to obtain a permit.

### **Equestrian Use**

All trails are open for use by equestrians, except where management problems are identified and restrictions need to be established. Horses may also travel cross-country. Groups and organized events need to obtain a permit.

### **Bicycling**

Bicycles may be used on all open roads, but not on single-track trails, in wilderness, or off existing roads. Groups and organized events need to obtain a permit.

### **Motorcycles and ATVs**

Street legal, licensed motorcycles are permitted on open roads in the Preserve. All terrain vehicles (ATVs) such as three-wheelers and four-wheelers are not permitted. Motorcycles must have mufflers that permit normal conversation when the engine is idling. Groups and organized events need to obtain a permit.

### **Aircraft**

There are no designated airstrips in the Preserve on public lands. Landing of aircraft on roads, dry lakes, or other areas of the Preserve is not allowed. Use of private aircraft must be in accordance with FAA regulations, which provide for a recommended minimum altitude over parks of 2,000 feet.

### **Backcountry Use and Roadside Vehicle Camping**

Roadside vehicle camping is allowed along open routes of travel, outside of wilderness, in previously used areas. Many such pre-existing campsites can be found along dirt roads. Vehicles may not leave the road surface at any time and park on undisturbed vegetation. The creation of new campsites is prohibited. Collecting firewood is not allowed in the Preserve. Campfires are allowed in existing fire rings or in portable fire pans. Most backcountry structures on public land are available for public use with no restrictions. Organized events and groups would need to consult that section for specific permit requirements.

#### **Camping at High Use Areas**

The Preserve would monitor use of the backcountry and may impose restrictions at heavily used areas to prevent resource damage.

#### **Camping in Desert Tortoise Critical Habitat**

Currently, no restrictions are in place regarding camping in desert tortoise habitat. However, restrictions could be imposed where research or observations suggest that human activities may threaten the desert tortoise.

#### **No Camping Areas**

There are currently no areas where roadside vehicle camping is prohibited.

## **Groups and Organized Events**

All group activities and organized events occurring in the Preserve are required to obtain a permit. The Preserve makes a determination on each permit based on an interpretation of NPS regulations. No overall park policy exists to guide the decision process, or to ensure consistency.

## **Visitor Use Fees**

In April 2000, the National Park Service, in a partnership with the National Park Foundation, announced a new National Parks Pass. A parks pass provides entrance to all national parks for one year at a cost of \$50. Parks selling the pass would be allowed to retain \$35 for use on projects at that park. These passes are sold at all national parks and over the internet via several retail partners. Mojave sells this pass as a public service, even though an entrance fee is not required to enter the Preserve. No entrance fees are being collected or considered. The only other visitor use fees collected in Mojave National Preserve, are camping fees for the Mid Hills and the Hole-in-the-Wall campgrounds and the group area at Hole-in-the-Wall. Fees are also collected for special use permits (such as filming, organized group outings, etc.).

## **COMMERCIAL ACTIVITIES**

### **Mineral Development**

The Preserve was established by Congress with the provision that mining activities may occur on valid existing claims under all applicable laws and regulations administered by the National Park Service (sec. 508). The Mining in the Parks Act of 1976 (P.L. 94-429) prescribes that all activities resulting from the exercise of valid existing rights on patented and unpatented mining claims within any unit of the national park system shall be subject to regulations developed and administered by the National Park Service. The regulations governing mining on all patented and unpatented claims in park units are found at 36 CFR Part 9A, which requires operators to file a plan of operations with the National Park Service for all mineral related activities. Proposed mining operations must also meet the approval standards provided in the regulations and post a performance bond equivalent to the cost of reclamation before an operation may proceed.

No specific mining is authorized by this general management plan. Each mining proposal is required to submit a detailed mining and reclamation plan and undergo separate environmental impact analysis. Consultation for listed species and cultural resources would occur at that time. When mining is authorized, full reclamation of the site is required upon cessation of mining activity.

Congress closed Mojave to all new mining claim location and all other forms of appropriation and disposal. Section 507 of the California Desert Protection Act withdrew the area from all forms of entry, appropriation or disposal under the public land laws; from location, entry and patent under the United States mining laws; and from disposition under all laws pertaining to mineral and geothermal leasing and the sale of mineral materials. This provision of the act is subject to valid existing rights.

The California Desert Protection Act also imposes a requirement that validity of unpatented claims be determined prior to approval of any operation (sec. 509). This section also requires an analysis of the environmental consequences of mineral extraction, a determination of the estimated acquisition costs, and the submission to Congress of recommendations on whether any valid or patented claims should be acquired. The park has certified mineral examiners and is systematically reviewing all unpatented mining claims to determine their valid existing rights and, if necessary, to conduct a validity examination to determine if a valuable, economic discovery of mineral exists on the claims.

The National Park Service also regulates mineral development on valid nonfederal oil and gas interests in accordance with 36 CFR Part 9B. This involves the review of plans, impact analysis, and permitting of the proposed extraction of oil or gas on property where the surface is held by the federal government, but the mineral rights were retained by the private party when the land was acquired.

Whenever a proposed mineral development fails to meet the regulatory approval standards and no alternative development scenario is feasible, the National Park Service would seek funding to initiate acquisition of the mineral rights.

### **Cattle Grazing**

The Mojave National Preserve's enabling legislation contains the following statement:

The privilege of grazing domestic livestock on lands within the Preserve shall continue to be exercised at no more than the current level subject to applicable laws and National Park Service regulations.

The "current level" is defined for each permit as the number of animal unit months authorized for that portion of the previous BLM grazing allotment that lies within the Mojave National Preserve on the date it was established (October 31, 1994). These levels were established in consultation with the BLM Needles Field Office.

The National Park Service issued special use permits to ranchers to allow continuation of cattle grazing on ten previous BLM grazing allotments that are now partially or wholly within the boundary of the Preserve. The allotment boundaries, animal unit months (AUM), and the rules and restrictions (season of use, supplemental feeding, forage utilization levels) are the same as those that existed when the Bureau of Land Management managed the Preserve lands before the passage of the California Desert Protection Act in October, 1994. Seven of the allotments have boundaries that are on federal land managed partly by the National Park Service and partly by the Bureau of Land Management.

The National Park Service monitoring of the range or ranchers' compliance with permit conditions is currently limited. The rancher's pay grazing fees to the National Park Service based on the BLM fee schedule (\$1.35/AUM or a total for all 10 allotments of about \$50,000/year). The Preserve would continue to handle requests for the replacement or installation, of range improvements with assistance from other units of the national park system.

The recent purchase of the Granite Mountains grazing permit by the National Park Foundation and its subsequent permanent retirement by the park in April 2000, resulted in a reduction of grazing in the Preserve by 4,475 AUMs.

**TABLE 7: EXISTING GRAZING PERMITS AND AUTHORIZED PERENNIAL AUMs**

<b>Permit Area</b>	<b>AUMs</b>
Clark Mountain	371
Colton Hills	2,877
Gold Valley	1,152
Round Valley	27
Kessler Springs	7,615
Lanfair Valley	11,560
Piute Valley*	0
Valley View	8,069
Valley Wells	853
<b>TOTAL</b>	<b>32,524</b>

*\*Piute Valley is an ephemeral permit only.  
There is no perennial authorization.*

Grazing is allowed under existing U.S. Fish and Wildlife Service's Biological Opinions on the desert tortoise, until this plan is completed. The U.S. Fish and Wildlife Service concluded in its opinion that the NPS interim livestock grazing program would not be likely to destroy or adversely modify designated desert tortoise critical habitat because of the following:

1. The National Park Service would continue to permit grazing under its current program while preparing a management plan, with formal consultation with the U.S. Fish and Wildlife Service before the plan was approved.
2. The adverse effects of the proposed grazing program on desert tortoise critical habitat have been minimized by the implementation of the terms and conditions of existing biological opinions (see pp. 14-21, FWS 1994; pp. 19-29 FWS, 1994A, and pp. 24-32 FWS 1993).
3. In addition to the measures already implemented to minimize the effects on tortoises and their critical habitat, the National Park Service would continue to implement recovery actions for the desert tortoise (e.g., acquiring private and state land and retiring grazing privileges) while the plan is being prepared.

The Endangered Species Act directs federal agencies to use their authority to further the purposes of the act by carrying out conservation programs for the benefit of endangered and threatened species.

The U.S. Fish and Wildlife Service recommends that the following measures be implemented:

1. Until completion and approval of the plan, the National Park Service should ensure the removal of as many of the following human activities detrimental to the desert tortoise as possible: (a) off-road vehicle (ORV) activities, (b) competitive and organized events, (c) landfills and any other surface disturbance that would diminish the capacity of the land to support desert tortoises, (d) grazing by cattle, (e) grazing by burros, (g) harvesting of vegetation, (h) dumping and littering, (release of captive or displaced desert tortoises, and (j) collection of wild desert tortoises.
2. The National Park Service should close and rehabilitate unnecessary roads within critical habitat.

3. The Bureau of Land Management and the National Park Service should initiate or complete studies to quantify the destruction of tortoise burrows and trampling of tortoises by livestock.

The *Terms and Conditions of the Special Use Permit for Grazing* is included in appendix G. These terms and conditions and those from the U.S. Fish and Wildlife Service's Biological Opinion (1-6-92-F-19) are used with data from the allotment management plans to manage grazing within the Preserve. Examples of some of these conditions include:

- Utilization shall be limited to between 20 and 50% of key species. In desert tortoise habitat utilization of key perennial grasses shall not exceed 40% from February 15 to October 14.
- Feeding of roughage, such as hay, hay cubes, or grains to supplement forage quantity, shall not be allowed in desert tortoise habitat.
- Grazing shall be curtailed to protect perennial plants during severe or prolonged drought.
- Monitoring of perennial plant utilization, ephemeral forage production, and range condition and trend shall be implemented.
- In Clark Mountain, Piute Valley and Valley Wells (allotments with fair or poor range conditions) utilization of key species shall not exceed 30%.
- In Category I and II desert tortoise habitat utilization shall be light (no more than 40%) on all key species.

### **Filming**

Filming for commercial or educational purposes may be authorized, subject to NPS policies and regulations governing such activities, including wilderness restrictions. A special use permit is required for all filming activities and a fee would be assessed. Filming activities are subject to the same rules and regulations as other activities, including no off road driving. Filming may not be allowed in desert tortoise critical habitat during the active periods in the spring and fall, depending on the nature of the particular film shoot. All costs associated with desert tortoise surveys and onsite monitors during filming are charged to the permittee.

### **Visitor Services**

No commercial visitor services or concessions contracts exist on park land and none are anticipated. Special use permits would continue to be granted individually for commercial services such as guided tours and hunting guide services. Currently, the park issues permits annually to two licensed hunting guides who provide guiding service for bighorn sheep hunts.

## **PLAN IMPLEMENTATION**

### **STAFFING AND BUDGET**

A park superintendent provides overall management of the park. The park is organized into five teams: Management, Administration, Maintenance, Resources Management, and Visitor Services. Staff are supplemented and/or supported using special project funds, contracts, assistance or expertise of various other NPS parks and central offices, and/or other partners, or organizations. The park's base operating budget in fiscal year 2000 is \$3,137,000, which funds a work force of 43 positions. This work force is supplemented by volunteers and special project and program funds distributed by the National Park Service Regional and Washington offices (see summary below). Achieving our FY2000 annual performance goal targets is critically dependent on our base funding and on these additional project funds, volunteer assistance, partnerships and donations.



Under this alternative, priorities for allocating staff and funding are determined year by year according to the strategic planning process. The Preserve's strategic plan sets five-year planning goals, but the annual goals are revised and adjusted yearly. Allocation of positions and funding are adjusted as needed to place resources where most appropriate to meet the demands. Activity level planning would be pursued, with most of the identified plans being completed within ten years.

Funding would be pursued from a variety of special funds (both governmental and private) to provide resources for accomplishing the goals and objectives of the strategic plan and activity plans. This approach would result in an unpredictable implementation schedule.

**TABLE 8: EXISTING MANAGEMENT ALTERNATIVE STAFFING**

<b>FUNCTION</b>	<b>EXISTING STAFFING</b>
Management	3.0
Administration	6.5
Resource management	12.0
Visitor services	11.0
Maintenance	5.0
Fire management*	5.5
<b>TOTAL</b>	<b>43.0</b>

\*In FY00 the fire management program includes a fire management officer, a fire clerk, one permanent subject-to-furlough and seven seasonal (6 month) positions hired by the National Park Service. The Bureau of Land Management also provides seven seasonal positions. The entire program is funded with FIREPRO money and is not included in the Preserve operating base. The annual cost in FY 99 was \$240,000.

In FY2000, the Preserve also received non-recurring funding for the following:

- \$60,000 in fee demonstration funding that will allow the park to convert a closed wilderness road to a hiking trail and provide parking and trail brochures.
- \$731,000 for final engineering and design specifications, and construction drawings, as well as exhibit planning, historic furnishings study and environmental compliance for the rehabilitation and partial restoration of Kelso Depot for a visitor center and museum.
- \$5,000,000 for land acquisition, appropriated from the Land and Water Conservation Fund, specifically to begin acquisition of over 82,000 acres of Catellus private land in the Preserve.
- \$240,000 for fire suppression activities in the park funded by the national Firepro account.
- \$150,000 for planning staff support and printing costs to produce draft and final GMPs and EISs, funded out of the NPS national planning fund.
- \$297,000 from the NPS national resource protection fund to support the feral burro removal program (second year of three years of funding)

Alternatives, Including the Proposed Action

- \$50,000 from the NPS national resource protection fund to initiate desert tortoise monitoring (first year of three years of funding)

In FY2001, the Preserve is slated to receive recurring funding for the following:

- \$492,000 for desert tortoise recovery actions, including monitoring, protection, interpretation and education, and research



*buckhorn cholla*

## **ALTERNATIVE 3: OPTIONAL MANAGEMENT PLAN**

### **GENERAL DESCRIPTION**

This alternative is similar to alternative 1, the proposed general management plan, except for specific changes to the following topics. If no third alternative concept was identified that was feasible and implementable as a management plan strategy, without seeking legislation, then that topic is the same as the proposed action. Any of these concepts could be substituted in the final management plan strategy that is selected to be implemented. The items addressed under Actions Common to All Alternatives must also be read and considered as part of this alternative.

### **MANAGEMENT OF PARK RESOURCES**

Unless a topic is addressed below, it is assumed to be the same as the proposed action alternatives.

#### **PHYSICAL RESOURCES**

All the subjects covered under this general topic heading are the same as alternative 1, the proposed general management plan.

#### **BIOLOGICAL RESOURCES**

All the subjects covered under this general topic heading are the same as alternative 1, the proposed general management plan, except for desert tortoise and burros, addressed below.

#### **Sensitive Species and Habitats**

##### **Desert Tortoise**

In addition to the actions identified in the proposed action (or instead of in some cases), the National Park Service would adopt the following policies and seek funding, where necessary, to implement them:

- Designate category I critical habitat in the Preserve as “Desert Wildlife Management Area” (DWMA) management zone (see figure 2).
- No dogs permitted off leash in DWMA's
- Permanently reduce speed limits on paved roads in DWMA's to 45 mph
- Close and restore 100 miles of dirt roads in DWMA's
- Interagency management actions same as proposed, except:
  - Seek permit from USFWS to begin immediate raven removals in DWMA's
  - Install desert tortoise barrier fencing along 100 miles of paved roads in DWMA's
  - Roadside vehicle camping in DWMA's would be limited (see camping section for details).
  - Designate grazing permit areas in DWMA's as ephemeral pasture (see grazing section for details).

#### **Introduced Species**

##### **Burros**

This alternative would be the same as the Proposed Action, except for the following:

To most effectively remove burros from the Clark Mountain area and prevent their future ingress, Mojave would:

- Fence the Clark Mountain unit of the Mojave National Preserve, following the Preserve boundary. To allow for deer and bighorn sheep ingress and egress, critical portions of the fence would be constructed similar to that proposed by Andrew, Lesicka, and Bleich (1997), which allows deer and bighorn sheep to pass, but not burros or cattle. This alternative could not be implemented until the existing cattle grazing permits within the park are retired.
- After the fence is completed, Mojave would follow the phased burro removal strategy outlined in the proposed action above for the main unit of the Preserve.

### **CULTURAL RESOURCES**

All the subjects covered under this general topic heading are the same as alternative 1, the proposed general management plan.

## **FACILITIES AND DEVELOPMENT**

Unless a topic is addressed below, it is assumed to be the same as the proposed action alternatives.

### **VISITOR INFORMATION**

#### **Information Centers and Sources**

Due to the Kelso Depot not being rehabilitated for use as a visitor center in this alternative, the National Park Service would work with other federal land management agencies to increase the size and function of existing visitor information centers at Baker and Needles. Besides providing desert travel and recreation information for all public lands, exhibit space would be sought to provide interpretation of the natural and cultural resources of the desert. This could provide more diversity and depth to the information available to the public. Mojave would place a greater emphasis on Baker as the primary exhibit and interpretive facility for the Preserve, while supporting the Bureau of Land Management and encouraging the bureau to focus on Needles and providing exhibits and information more relevant to BLM managed lands. Both facilities would provide recreation information about all public lands in the area.

In addition, a new visitor contact center would be added in the Cima area, in conjunction with a central field operations facility (see “Park Support Facilities” below). This facility would be staffed seven days per week and would serve as a central emergency contact facility with protection rangers on staff and housed at the site. This facility would serve visitors that enter the Preserve from the north and south and do not pass by either the Baker or Needles facilities. It would not contain exhibits, but would focus instead on basic park orientation, information and book sales.

### **INTERPRETIVE FACILITIES**

#### **Kelso Depot**

Funding would be sought only to protect Kelso Depot from fire, earthquakes, and further deterioration. The interior would not be open for use. The depot would be interpreted through exterior exhibits and interpretive panels. Permanent comfort stations would also be added and parking areas better defined (see “Appendix B: Kelso Depot Development Concept Plan”).

### **Soda Springs (Zzyzx)**

Education and outreach by the National Park Service at the Soda Springs Desert Studies Center would be the same as under the proposed action, except that interpretive staff would be present onsite to provide ranger-guided tours of key features at Soda Springs. A small facility to support a staffed interpretive program would be built to serve visitors. Additional interpretive exhibits and day use hiking trails may also be added. The facility would initially be staffed only during periods of heavy use, with the frequency of staffing increasing if visitation increased. A development concept plan would be prepared to coordinate proposed and existing visitor facilities. The Preserve may also increase its use of the Soda Springs facilities for visitor and administrative functions. Employee housing may be added to provide onsite protection and maintenance services.

### **Wayside Exhibits**

This alternative would place increased emphasis on placement of formal wayside exhibits and interpretive displays to educate the public on the significant resources in the Preserve. These exhibits generally would be placed in conjunction with the maintained road network. There would be more focus on guided interpretation than in the proposed action. Visitors would receive more direction and information in the field, with less emphasis on exploration and self-discovery than in the proposed action. Additional trailhead parking displays would be established as needed.

### **DEVELOPED CAMPGROUNDS**

If visitation and demand for campsites increased, the number of campsites in developed campgrounds would be increased, but the density would remain the same. Locations for a group campground at or near to the Mid Hills campground would be considered to provide a cooler summer alternative to the Hole-in-the-Wall group area. Some aspects of campground management could be contracted out to the private sector to reduce future NPS workloads.

To compensate for the loss of some roadside vehicle camping opportunities in desert tortoise habitat, the Preserve would develop three additional primitive campgrounds (without water) with fifteen sites each. Specific sites have not been chosen, and additional planning, compliance and public input would be sought before development would proceed. Generally, developed camping opportunities west of the Providence and New York mountains currently do not exist. Consideration would be given to sites on Cima Dome in the Joshua tree woodland, in the Granite Pass vicinity, and in the Kelso Dunes area.

### **RESEARCH AND EDUCATION CENTERS**

#### **Soda Springs Desert Study Center**

No changes to the proposed action regarding the use of the site by the research and education community. See “Interpretive Facilities” section above for a description of additional NPS facilities and public use proposals.

#### **Granite Mountains Natural Reserve**

Unstaffed entry kiosks would be placed at key entry points to public use areas adjacent to and in the natural reserve. Each station would contain features such as bulletin boards where visitors could get information on the natural reserve’s purpose and research activities and resource protection standards for the use of the natural reserve. Visitors would be asked to self-register at these stations on a voluntary basis to give the National Park Service information about visitor use.

The National Park Service would work with the University of California to monitor sections of the natural reserve that receive public use to determine if adverse impacts related to visitor use were occurring. Information gathered from visitor use registers and resource surveys would be used to support future management decisions intended to preserve the quality of the natural and cultural resources.

## **PARK SUPPORT FACILITIES**

### **Headquarters**

Same as proposed action.

### **Field Offices**

Under this alternative, the park proposes to construct a central field operations facility in the Cima area. This facility would provide office space for resource management, visitor services, and maintenance functions, as well as serve as an information center, maintenance shop and storage area, fire dormitory and garage for fire engines, and employee housing. See those separate sections for details. A separate site management plan and environmental compliance analysis would be prepared to detail the specific site location, layout and facility size.

### **Maintenance Facilities**

A maintenance facility, consisting of a shop for carpentry, plumbing, and limited vehicle maintenance, and both indoor and outdoor storage space, would be constructed in the Cima area. Existing aboveground fuel tanks at Hole-in-the-Wall fire center would be relocated to this site. Office space for maintenance staff would also be added.

### **Interagency Fire Center**

A new dormitory, kitchen and shower facilities to house a seasonal fire crew of 15 would be constructed in the Cima area, in association with the maintenance shop and information center. A new garage to house the NPS and BLM engines would be also be constructed, with sufficient storage space for fire fighting equipment. The existing fire center at Hole-in-the-Wall would be demolished and the site restored.

### **Employee Housing**

The focus of this alternative would be to construct new housing in the Preserve to place field employees closer to their work. Besides the fire dormitory, several employee houses and possibly an apartment or duplex complex would be built in conjunction with the central Cima field facility discussed above. Less emphasis would be placed on rehabilitating existing buildings that the government might acquire by purchase or donation. If it were determined that renovation would not be cost-effective, new construction would be undertaken. Before upgrading existing acquired homes or constructing new housing for employees, the Preserve would evaluate the location of the housing and make a determination about whether private housing elsewhere within a one hour drive could serve the same need, and whether the total housing units are the minimum necessary to meet the mission of the Preserve.

## **ACCESS AND CIRCULATION**

### **Roads**

This alternative is the same as the proposed action, except as discussed below.

### **Paved Roads**

This alternative considers the scenario of the National Park Service assuming all maintenance responsibility for park roads (176 miles), assuming the county was unable or unwilling to continue this responsibility. Maintenance standards would be addressed in a separate road management plan. However, the speed limit in desert tortoise wildlife management areas would be lowered to 45 mph.

### **Maintained Dirt Roads**

As with paved roads, if the county were to no longer willing or able to continue to maintain the unpaved Cedar Canyon, Black Canyon, and Lanfair Valley roads, the National Park Service would assume maintenance responsibility for these primary access roads (79 miles). These roads would be in addition to the current roads that are maintained by the park (Soda Springs facilities, Kelso Dunes and Wild Horse Canyon road). Maintenance standards would be addressed in a separate road management plan.

### **Backcountry Roads**

This alternative is the same as the proposed action, except for the 100 miles of roads to be closed and restored in desert tortoise critical habitat.

### **Mojave Road**

No business permits would be allowed for commercial guided tours of the Mojave Road. The National Park Service would adopt a permit system to manage use of the road so that the quality of the experience could be protected from problems associated with too many vehicles on the road at a time in any given area. The number of groups using the Mojave Road would be limited to minimize impacts on the road and campsites. To protect the Mojave Road, the National Park Service would also limit the number of vehicles allowed to travel the road each year. This limit would be created within the first few years after this plan is completed. The limit would be based on an evaluation of the condition of social, cultural, and natural resources with no more than 1,000 vehicles added to the annual number of vehicles using the road at the time of the evaluation. This limit would be reevaluated and adjusted as needed. The final management of use of the road would be determined in the backcountry/wilderness management plan.

### **Trails**

This alternative would focus on providing more day use hiking opportunities for the visitor that are accessible from maintained roads. These trails would be developed to provide accessible walking paths to key features. As with the proposed action, a comprehensive backcountry/wilderness management plan would address trail use by hikers, equestrians, bicycles, and visitors with disabilities. The plan would identify the type and intensity of trail development, including the number of signs, trails, and trailheads, long distance trails extending into Bureau of Land Management or California State Parks and other jurisdictions, and anticipated maintenance levels for developed trails. The plan would be guided by the goal of increasing the diversity of recreational opportunities for the above activities in appropriate locations. Until completion of the plan, all trails would be open for use by hikers and equestrians, except where management problems were identified and restrictions needed to be established.

Two new trail opportunities are proposed to proceed immediately under this alternative. They would be developed mostly from existing roads, rather than new disturbance, and would provide new visitor hiking opportunities immediately. These are addressed below.

A new hiking trail would be developed in the Hole-in-the-Wall area to increase day use opportunities. A loop trail around the mountain behind the information center and campground would be developed

using existing roads wherever possible. Interpretation of natural and cultural resources along the trail would be emphasized.

A new trail would also be developed along an old road into wilderness on the south side of the Castle Peaks. The first several miles of the road are “cherry-stemmed” from wilderness. A small parking area and trailhead sign would be developed in this area. The existing road (about five miles) would be partially restored to create a hiking corridor.

### **RIGHTS-OF-WAY AND EASEMENTS**

This topic is the same as alternative 1, the proposed general management plan.

### **WILDLIFE GUZZLERS**

This topic is the same as alternative 1, the proposed general management plan.

### **RANCHING DEVELOPMENTS**

This topic is the same as alternative 1, the proposed general management plan, except for the potential of moving some developments where it may be beneficial for the desert tortoise or other resource management goals. None of these potential relocations have yet been identified.



*Hackberry Mountains*



## **USE OF THE PRESERVE**

Unless a topic is addressed below, it is assumed to be the same as the proposed action alternatives.

### **RECREATIONAL ACTIVITIES**

#### **Rock-Climbing**

This topic would be the same as alternative 1, the proposed general management plan, with the following exceptions:

- Power drill usage would be permitted outside wilderness under permit.
- All wilderness areas within Mojave would be closed to any further placement of bolts and other types of fixed anchors. Fixed anchors in wilderness would only be allowed if they currently exist (at the time of the signing of the general management plan), if they are placed as a rappel anchor at the top of a route, or if they are an in-kind replacement of an existing bolt or anchor for safety purposes.
- Climbing at Clark Mountain would be seasonally closed during bighorn sheep lambing season (February–June) upon the signing of this general management plan. Mojave would study climbing impacts on sheep, and if warranted, lift the seasonal restriction.
- The area immediately behind and within sight (within 500 feet) of the Hole-in-the-Wall visitor center would be closed to technical rock-climbing.

#### **Hunting, Fishing, and Trapping**

Hunting, fishing, and trapping under this alternative would be managed the same as the proposed action, except there would be no restrictions on species that could be hunted or trapped. However, no hunting would be allowed anywhere in the Preserve from February through June in accordance with the recommendation of the desert tortoise recovery plan. Dogs could be used in accordance with CDF&G regulations, outside desert tortoise critical habitat. No dogs would be permitted off leash within desert tortoise critical habitat.

#### **Backcountry Use and Roadside Vehicle Camping**

This topic is the same as alternative 1, the proposed general management plan, except as addressed below.

##### **Camping at High Use Areas**

Heavily used areas informal campsites may be improved by such additions as metal fire rings and picnic tables at each campsite, except along the Mojave Road. Other improvements such as restrooms and vehicle barriers might be added later to reduce adverse impacts on natural resources. These areas usually would not have water, trash receptacles, or paved roads.

##### **Desert Tortoise Critical Habitat**

In sensitive areas designated as critical habitat for the desert tortoise, vehicle-based roadside camping would be confined to a limited number of designated campsites with metal fire rings or campsite markers to identify them for use. Previously used areas would be considered first for designation. The designation of campsites would come after an inventory of natural and cultural resource conditions and existing campsites to determine the best locations. Campsites would be considered closed unless designated.

## **COMMERCIAL ACTIVITIES**

### **Mineral Development**

The Preserve would administer mineral development activities under existing laws and regulations applicable to such activities. This action is the same as alternative 2, the existing management alternative. Please refer to that alternative for a complete description.

The Preserve would also undertake a sensitive resource analysis based on an objective analysis of physical, biological, cultural and visitor use values relative to projected mining impacts. This analysis would examine potential mineral development scenarios that would be likely to occur on each property based on the deposit, and assuming operator performance standards and specific mitigation would be applied to protect resources and values. The results of this analysis would be used to identify areas of the Preserve where mineral development would be inconsistent with the mission of the Preserve and likely mineral development may not be able to meet 36 CFR Part 9A or 9B approval standards. In these areas, validity exams would be a priority, and funding to acquire valid outstanding mineral rights would be pursued.

### **Cattle Grazing**

Grazing would be managed in the same way as alternative 1, the proposed general management plan except as presented below:

- This option would convert category I critical habitat areas in the Preserve to ephemeral only pastures. Perennial AUMs on the remainder of the permit area would be reduced by a corresponding amount to reflect the loss of acreage in critical habitat. Cattle grazing would then be allowed on these critical habitat areas only when ephemeral forage is at 230 lbs./acre. This number could be adjusted as additional research demonstrates. This option would be phased in over the next two years while conservation buyouts of willing seller ranchers are pursued. Fencing of critical habitat would not occur. Instead, cattle would be moved by controlling water. Some utilization of the edges of the critical habitat would have to be tolerated, but cattle generally do not wander too far from water.
- The NPS portions of the Clark Mountain and Valley Wells grazing allotments would be acquired via third party conservation groups and retired. Cattle grazing would be removed from the area and the boundary of the Clark Mountain unit would be fenced. These permits are small pieces (about 20%) of larger BLM grazing allotments that mostly lie outside the Preserve. The Clark Mountain permit contains 371 AUMs and covers 17,500 acres. The Valley Wells permit contains 853 AUMs and covers 43,600 acres. Ranching developments would be removed and natural springs would be restored.

## **PLAN IMPLEMENTATION**

### **STAFFING AND BUDGET**

The park's base operating budget in fiscal year 2000 is \$3,137,000, which funds a work force of 43 positions. In order to fully implement this alternative over the 15-year life of the plan, and assuming that above itemized activities are undertaken (including the "Actions Common to All Alternatives" section) and visitor use of the Preserve increases, an additional 45 staff would be needed. This would require approximately \$4 million per year for salaries, benefits and administrative expenses (space, utilities, vehicles, etc.). The cost of developing all proposed facilities identified would be approximately \$12 million.

### **ESTIMATED COSTS OF PROPOSED DEVELOPMENTS AND PROGRAMS**

The construction and planning cost estimates in table 5 are conceptual estimates only. These costs are based on similar types of facilities and past NPS experience derived from contract data. The estimates include indirect costs added to cover such things as design services, contract supervision, and contingencies. They also take into account the cost of contracting for such services in a remote park setting, seasonal constraints, labor availability, and wage rates. The costs are based on year 2000 values.

The estimated costs of acquiring private lands and mining claims under this alternative are not yet available. No comprehensive evaluation of land acquisition costs has been undertaken in accordance with NPS policy and therefore cannot be estimated at this time. The cost of acquiring property involves title searches, appraisals, relocation costs, and fair market value of the property. These specific costs would be available only on a property by property basis and would need to be determined based on current market values. An approved cost estimate for the land protection alternative selected would be prepared at a later date by the Washington office.

**TABLE 9: OPTIONAL MANAGEMENT ALTERNATIVE COST SUMMARY**

*\*These costs are in addition to those listed under the "Actions Common to All Alternatives" section.*

<b>Proposed Activity</b>	<b>Gross Construction Costs</b>	<b>Pre-Design Costs &amp; Supplemental Services</b>	<b>Design Costs</b>	<b>Total Project Costs</b>	<b>Phase</b>
<b>Desert tortoise recovery</b> actions (research, monitoring, education, displays) (increased patrols, road restoration, barrier fencing)* 8 new positions	-	-	-	\$600,000 annually \$3,300,000 fixed costs	I
<b>Mojave tui chub recovery</b> actions (pond dredging, aquatic plant control, monitoring)	-	-	-	\$75,000 annually	I
<b>Remove feral burros</b> (approx. 700 animals @ \$800/burro) fence Clark Mountain boundary (36 miles)	-	-	-	\$560,000 in FY01 \$1,500,000	I
<b>Enhance cultural resource program</b> (inventory, monitoring, studies, nominations, protection, interpretation) 8 new positions	-	-	-	\$494,000 annually	I
<b>Kelso Depot stabilization</b> and fire protection (including exterior exhibits, parking, walkways, landscaping and comfort station)	\$945,000	\$56,000	\$80,000	\$1,081,000	I
<b>Soda Springs</b> (small visitor facility, self-guided interpretive trail, displays, and exhibits)	\$175,000	\$12,000	\$18,000	\$205,000	II
<b>Interpretive displays/ exhibits</b> at fifteen key roadside locations (including parking lots)	\$350,000	\$20,000	\$30,000	\$350,000	I
<b>Developed campgrounds</b> (add 25 sites and two additional vault toilets)	\$375,000	\$22,000	\$33,000	\$430,000	II
<b>15 site semi-primitive campgrounds</b> at 3 sites with fire rings, picnic tables and pit toilets	\$250,000	\$15,000	\$20,000	\$285,000	I
<b>Informational kiosks</b> at three key entry points into Granite Mountains Natural Reserve	\$17,500	\$1,000	\$1,500	\$20,000	I
<b>Headquarters space</b> in Barstow (est. for GSA lease of 19,000 sq. ft., plus utilities and phones)	-	-	-	\$400,000 annually	I
<b>Field office</b> in location to be determined through site specific plan	\$140,000	\$8,000	\$12,000	\$160,000	II
<b>Central field operations facility</b> in Cima (office space, maintenance shops, visitor contact center and new interagency fire center)	\$1,650,000	\$100,000	\$150,000	\$1,900,000	II

Alternatives, Including the Proposed Action

Proposed Activity	Gross Construction Costs	Pre-Design Costs & Supplemental Services	Design Costs	Total Project Costs	Phase
<b>Replace existing mobile homes</b> in Baker with 2 and 3 bedroom duplexes (5 units)	\$384,000	\$23,000	\$33,000	\$440,000	II
<b>Renovate and upgrade acquired housing</b> in Preserve for employee use (per NPS housing standards – 5 units)	\$265,000	\$16,000	\$23,000	\$304,000	I
<b>Construct new housing</b> at Kelso, Cima and Hole-in-the-Wall (four 2-bedroom duplexes; six 3-bedroom homes)	\$1,225,000	\$42,000	\$100,000	\$1,367,000	II
<b>Road maintenance operation</b> (NPS acquires equipment and staff to assume maintenance of 176 miles of paved roads and 79 miles of maintained dirt roads) (8 positions)	-	-	-	\$495,000 annually \$350,000 equipment	I
<b>Develop new hiking trails</b> (Hole-in-the-Wall and Castle Peaks)	\$120,000	\$7,000	\$10,000	\$137,000	I
<b>Backcountry campsites</b> – improvements at three high use group areas (tables, fire rings, vault toilets)	\$100,000	\$7,000	\$10,000	\$117,000	I
<b>Enhance maintenance program</b> (maintain new facilities, equipment and supplies, 6 positions)	-	-	-	\$400,000 annually	I
<b>Sensitive resource analysis</b> for mineral development scenarios	-	-	-	\$100,000	I
<b>TOTALS</b>	<b>\$5,996,500</b>	<b>\$329,000</b>	<b>\$520,500</b>	<b>\$15,070,000</b>	

*\*These items are partially funded in the NPS FY01 budget, but funds have not yet been appropriated by Congress.*

PHASES: I — 1–5 years

II — 6–15 years



*desert tortoise*